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OVERSIGHT HEARING ON ARCTIC SNOW GEESE

HEARING

BEFORE THE

SUBCOMMITTEE ON FISHERIES CONSERVATION,
WILDLIFE AND OCEANS

OF THE

COMMITTEE ON RESOURCES
HOUSE OF REPRESENTATIVES

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OVERSIGHT HEARING ON ARCTIC SNOW GEESE

THURSDAY, APRIL 23, 1998

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON FISHERIES CONSERVATION, WILDLIFE AND OCEANS, COMMITTEE ON RESOURCES, *Washington, DC.*

The Subcommittee met, pursuant to notice, at 2:10 p.m., in room 1334, Longworth House Office Building, Hon. Wayne T. Gilchrest [acting chairman of the Subcommittee] presiding.

STATEMENT OF HON. WAYNE T. GILCHREST, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MARYLAND

Mr. GILCHREST. [presiding] The Subcommittee will come to order. Good afternoon. The purpose of today's hearing is to discuss the ongoing destruction of the Arctic tundra by lesser snow geese, and H. Con. Res. 175, introduced by Duncan Hunter and Duke Cunningham.

According to the Fish and Wildlife Service, whose biologists have been monitoring the snow geese population since 1948, there has been a dramatic increase in snow geese, from 800,000 in 1969, to five million today. This huge population increase has reduced thousands of acres of once thickly vegetated salt and fresh water marsh to a virtual desert. This has had the net effect of driving other species out and destroying valuable habitat.

Under current law, the Fish and Wildlife Service has tried to address the problem of overabundance by increasing hunting opportunities. Despite liberalizing hunting regulations, the population continues to increase by at least 5 percent each year. This increase is causing irreparable damage to fragile Arctic ecosystems.

House Con. Resolution 175 expresses the sense of Congress that there is a need for a comprehensive management strategy to save the tundra from excessive deprivation by mid-continent snow geese. It also directs the Fish and Wildlife Service to take comprehensive action to reduce the population of mid-continent snow geese to levels that can be supported without the destruction of tundra ecosystems, and are consistent with sound biological management principles.

I look forward to hearing from today's witnesses. Mr. Tanner was to be one of our witnesses, but unfortunately his mother passed away, so he can't make it here today. Does Mr. Pallone have an opening statement?

STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. Mr. Chairman, I can understand the phenomena and I know that in New Jersey they've also tried to have, you know, greater amounts of hunting seasons to try to deal with the problem, and apparently that has not had a lot of success in New Jersey as well, so I can certainly relate to the problem. But I understand there's no consensus on the best approach at this point to solve the issue, so I will be interested in hearing what Mr. Cunningham and the others would say on the issue. Thank you.

Mr. GILCHREST. Sam, you want to say anything?

STATEMENT OF HON. SAM FARR, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. FARR. Thank you, Mr. Chairman. Although this is not something that's affecting our back yard in California, it is affecting the nation's back yard. I would hope in the testimony to learn two things I couldn't pull out from reading the resolution. As I understand it, the geese are born in Canada and they come back to the tundra there to breed, and there's a big problem with the excessive degradation of the tundra nesting habitat.

But it seems to me, if you're going to have a comprehensive management strategy, you're going to have to, one, involve the Canadians, because the geese originate there and go back there. And two, how do you determine that the geese we hunt in this coutry are from an area of Canadian tundra that is being destroyed? Is there a causal connection between what you're doing, the management program, the hunting program down here, and the habitat destruction in Canada? Are they the same geese, or are they different flocks? Are we really dealing with the tundra problem? That wasn't clear in the resolution, and I'd appreciate perhaps if we could hear that in the testimony. Thank you.

Mr. GILCHREST. Thank you. I'll make a quick comment about the snow geese. Fifteen, twenty years ago, you would be hard-pressed to find snow geese on the Eastern Shore of Maryland. Right now, and I know the snow geese that we see on the Eastern Shore of Maryland are not from the same flyway as the kind of snow geese we're talking about today, but the snow geese on the Eastern Shore of Maryland now pretty much rival the Canada geese, so there is a huge increase. And not only are they rivaling the Canada geese, but also they are beginning to move the Canada geese out of their traditional grounds on the Eastern Shore of Maryland.

While we've had a 5-year moratorium, I think we're in the third or fourth year now of the Canada geese, you can hunt snow geese from September to January, 5 a day, 6 days a week, not on Sunday. And people don't—it's very difficult to hunt the snow geese in the same way that it would be difficult to shoot a swarm of bees. The Canada geese come down in a beautiful V-shape, they're easy to decoy, not that I want to do it any more because I can go to the grocery store, so I like to see them fly, but people do and that's fine. But when the Canada geese come down—and they come down, they swirl around like bees, and if you spook them up, they're not going to come back for a while, they'll land someplace else. So they're very difficult to hunt.

So I think, to a great extent, this legislation is important, and Duke, we look forward to your testimony.

STATEMENT OF HON. RANDY "DUKE" CUNNINGHAM, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. CUNNINGHAM. Thank you, Mr. Chairman, and I would like to thank you, and I hope I can answer Mr. Farr's and Mr. Pallone's questions in the testimony.

First of all, you know about our colleague, Mr. Tanner. I lost my dad a couple years ago, and I understand the pain that he's going through, and I'm sorry that he can't be here. He is the co-chairman, with myself, of the sportsman's caucus, and we will miss his presentation. Congressman Hunter, who just arrived, is always late, so that's excusable.

[Laughter.]

Mr. CUNNINGHAM. Hi, Duncan. But we miss Mr. Tanner, and Mr. Hunter is also on the sportsman's caucus.

Secondly, I empathize with Mr. Pallone with the Canadian geese up in New Jersey, because, as you're well aware on the Eastern Shore, they've not been able to hunt Canadians for the last three years. They say that they were immature Canadians and they wanted them to grow, but it also affects other portions of the country. So this does tie in, as well, with the Canadian geese.

I would say that what we've done, much like you have done, Mr. Chairman, on the tuna-dolphin bill. We've gone with a working group of a diverse group. We've included environmental groups, private groups, hunting groups, to sit and look at a real problem we have, and I think that's the reason why we're going to have success within the program itself.

And if you look at the tundra, where over 200 species of birds feed, and nest, and propagate, it is a desert. There are areas in which they can't feed, they can't nest, and it's not only going to decimate the snow geese. It's going to decimate the environment and the other species that live and propagate off this portion of the land itself.

But the working groups—we've got U.S. Fish and Wildlife, Canadian wildlife services, State wildlife agencies, non-governmental organizations, and it's documented within this text that I have. I'd be happy to give a copy to the Committee, on what the recommendations are. And again, this is a very diverse group that sat down and said, we've got a problem, how do we fix it in a very partisan-like way. And I'm proud of that working group and what they've been able to accomplish.

Mr. GILCHREST. Duke, would you like—I could ask unanimous consent that that document be put into the record.

Mr. CUNNINGHAM. Yes, I'd like to do that, Mr. Chairman.

[The information referred to may be found at end of hearing.]

Mr. CUNNINGHAM. "Arctic Ecosystems in Peril: Report of the Goose Habitat Working Group—A special publication of the Arctic Goose Joint Venture of the North American Waterfowl Management Plan."

And it'd be available for anybody that would like to read it. It's 118 pages, and I think it will point out some good things.

What's happened is that there's about a 50 percent increase on the snow geese, and they've decimated—I mean, absolutely, completely decimated about 35 percent of tundra. And if you look at it, we have pictures in the book, and I think we've got some posters, that show just how devastating this is. Over half of it has been damaged, besides the 35 percent. And if we allow this to go in the same order, that over 200 other species of birds—not just birds, but other wildlife that depend on the tundra—will be decimated in the fragile Arctic ecosystem itself.

The working group has a final goal of reduction of snow geese by about 50 percent. Now, I would tell you that the Canadians have come up with some pretty extreme measures, including poisoning, napalming, everything across the board to decimate these birds, which is totally unacceptable, I think, to most Americans, and most any group to get rid of the birds. But it is destroying their homeland and they want to get rid of them.

The working group has come up with some pretty good areas. Hunters count for about 68 percent of the harvesting of these animals, and that's one way, but that's only a part of the solution. We want to encourage more people, like you say, to extend the hunting season, to allow us to go into areas where we haven't gone—refuge systems, and areas to where they reside. But including that is a better information system to our cities, to people that hunt, for example, on Internet, or the Fish and Wildlife, to let people know, as you—as the chairman mentioned, these are pretty wary birds. They're difficult to hunt, they're smart, they even see a glint of something and they're gone. They go to another area. So just knowing where they are, and the way to do that is very, very helpful.

I would say the direct control, which is an alternative, is of last. That's from trapping, netting, even poisoning and some of the other things that I've mentioned before. But the area in which I think we can really work together to help this is, look at the management system for not just snow geese, but for the rest of it, because the Canadians, along with the snow geese and 200 other birds' habitat in this specific area.

I think the American sportsman has stepped up to the plate in many, many areas. The fees, the licenses, have gone to purchase additional lands, in which we'll help. There's such things that we can recommend, like, for example, putting in feed lots for the birds in the tundra area, which will attract the birds while the tundra is able to restore itself. To keep the birds away from tundra, there's noisemakers, there's other things that we can do that are all recommendations within the report itself.

But I thank the Committee for looking at this. It's an area in which I think we can, like the oceans bill, we can support unanimously with the different efforts, because they save the ecosystem, they work with wildlife management, based on a scientific plan, and that's based from a very diverse group itself.

And I yield back the balance of my time, and would yield to my colleague, my late colleague, Mr. Hunter.

[Laughter.]

[The prepared statement of Mr. Cunningham follows:]

STATEMENT OF HON. RANDY "DUKE" CUNNINGHAM, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Subcommittee Chairman Saxton, Members of the Subcommittee, thank you for offering me the opportunity to speak on the "Arctic Ecosystems in Peril" report. As Co-Chairman of the Congressional Sportsmen's Caucus and an avid hunter, I believe that today's hearing will provide this Committee a glimpse at the success of our nation's waterfowl management programs.

We are here today to address the Arctic Goose Habitat Working Group report "Arctic Ecosystems in Peril." The Arctic Goose Joint Venture Technical Committee formed the Arctic Goose Habitat Working Group to establish a scientific approach to the problem of habitat degradation on the Canadian tundra. The working group contained representatives from the U.S. Fish and Wildlife Service, Canadian Wildlife service, several state wildlife agencies, and nongovernmental conservation organizations.

This well documented 118-page report shows that across Canada, lesser snow geese have permanently destroyed as much as 35 percent of their nesting habitat; severely "damaged" another 30 percent so badly that it no longer will serve as a reliable food source; and the remaining 35 percent of habitat is beginning to show signs of overpopulation stress. If this trend is not checked and reversed, the geese populations will be in serious jeopardy of catastrophic collapse.

Simultaneously, this habitat destruction is severely impacting 200 other species of birds and wildlife that share the fragile arctic ecosystem.

The working group report recommends that we should establish a goal of reducing the snow goose population by between 5-15 percent per year, toward a final goal of a 50 percent reduction by 2005.

To reach this goal, I believe that hunters can and must be a part of the solution. Right now hunters account for 68 percent of adult snow goose mortality. Because snow geese are most susceptible to harvest during their migration and in winter, American hunters and waterfowl managers have a responsibility to craft solutions to this problem.

The Working Group report offers recommendations that they believe will increase the annual recreational harvest. These recommendations include the use of electronic callers, increased access to refuges and private lands, longer hunting seasons, and review of laws regarding shell limits, creeping, and baiting.

While we should examine all of those recommendations and will likely increase the take of hunters, I believe that we should use this opportunity to encourage more people to begin hunting.

The working group report discussed several programs that might accomplish that goal. These programs should focus on giving people who live in our suburban neighborhoods opportunities to return to the outdoors and enjoy hunting.

In addition, I believe that states should consider expanding informational resources hunters can use to track and hunt snow geese. In my southern California coastal district, surfers use the Internet to track surf and weather. State wildlife agencies or regional sportsmen's groups could begin a similar Internet-based update program for hunters of snow geese. Such a program would allow farmers and waterfowl managers to report areas where geese remain for an extended period. They could publish these reports on the Internet, allowing hunters to plan trips with a greater likelihood of success.

Even if we initiate these solutions, there is a chance that recreational hunting cannot solve the problem. Such failure would force state and Federal agencies to initiate "direct control" through trapping, netting or even more severe alternatives.

For that reason, it is important that we begin to take action now. Rep. Hunter and I have introduced H.Con.Res 175, which lends Congress' support to the need for immediate action to develop a comprehensive management strategy to save the vital tundra ecosystem of North America.

America's sportsmen have always responded when called upon to conserve our nation's resources. Sportsmen's dollars, through the Pittman-Robertson and Wallop-Breaux fees, established the refuges used by these waterfowl. American sportsmen stand ready to help solve the problem facing the Canadian arctic tundra.

Thank you.

Mr. GILCHREST. Mr. Hunter. Thank you for coming.

STATEMENT OF HON. DUNCAN HUNTER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. HUNTER. Thank you, Mr. Chairman, and it's a pleasure to be here with my good, good friend and fellow conservationist, Duke Cunningham, and I'm glad that he had the foresight and the wisdom to co-sponsor my bill. He's a good man.

But, seriously, Mr. Chairman, we are concerned, as I think most Americans are about wildlife and their well-being. Our waterfowl populations are, generally speaking, on a rebound throughout the country. A great of deal of that should be credited to people who hunt and fish in this country. As you know, as a resident of the Eastern Shore, who also is a great conservationist, these hunters buy licenses, they pay in taxes under Pittman–Robinson for wetlands that are developed, and as a result of that, are conservationists in the tradition of Teddy Roosevelt. And Mr. Chairman, I commend you for everything that you've done, because you've done a lot.

But in the tradition of Teddy Roosevelt, we've really brought back a lot of wildlife species, and this is an unusual problem, because we brought back the snow goose to numbers that are now detrimental to the environment. And the interesting thing about the Arctic tundra, particularly around Hudson Bay, which is being decimated by this five million goose population of mid-continent, lesser snow geese, is that tundra is irreplaceable. We can go in other places in the continent, we can build nesting ponds, we can excavate sloughs and marshes. You can't replace tundra. And in these places where we've made the test, where the snow geese have overgrazed the tundra, we'll actually have a fence around a piece of tundra, so it's a place where we can see the difference between places that are being grazed by the geese and places that are fenced off. The fenced off areas have not come back, Mr. Chairman. And it looks like some of it may be permanently damaged, which is very tragic.

But the second tragedy, and the compounding of this tragedy, would be if we don't do anything about it. Now, as Duke said, you've got about five million snow geese, so they've increased, these mid-continent and lesser snow geese have increased in numbers, from 900,000 to over 5 million between 1969 and the present day. The problem is further compounded by the fact that you have very smart birds. The average age now of a snow goose is about 8 years old. They're very wary. They tend to congregate in very large flocks. And they know when to find a refuge.

So the alternatives that Duke laid out, particularly of poisoning in their nesting grounds, is, I think, something that most Americans don't want to see. And the answer has to be a marriage, or a partnership between sportsmen and environmentalists who do most of the harvesting of snow geese in this country.

And, incidentally, Mr. Chairman, these snow geese go to families who enjoy geese, not just having a goose for Thanksgiving or Christmas, but it's excellent table fare. It goes to feed people. We have programs, Food for the Hungry for example, that sportsmen run, so if we shoot, if we increase our harvest of snow geese in the United States, we're going to see that resource, that food, that meat go to people who can use it. We've done an excellent job of doing that in the past with all types of wildlife, from deer on down. We can do that with snow geese. That's much preferable to poisoning snow geese in their nesting grounds as a last, desperate attempt to keep them from destroying the Arctic tundra.

So our bill, the bill that Duke and I are offering, says to the Fish and Wildlife, we're behind you. Let's get on with this business of reducing the snow goose population, from the five million numbers that we are experiencing to something that can be biologically supported, and the expert evidence is to the effect that that's about 2.5 million birds. Now, to do that, we're going to need probably to extend seasons. We're going to need to—that means that the season, instead of ending, say, January 30, or January 15 in most of the snow goose areas, and that's about, that's where the latest seasons run, generally, only to the end of January, extending those seasons.

It also means educating farmers, so if one farmer has 60,000 snow geese on his particular ranch or farm, he allows Fish and Wildlife to go in, and either let hunters come in and hunt them, or disturb them so they will move off into areas where they can be harvested, where they can be taken. So it involves an education program in the communities where snow geese congregate.

It also involves our wildlife hunting areas that are maintained by the State and by the Federal Governments, where you have great congregations of snow geese, and these smart birds find out where they can't be shot. But it's going to involve seeing to it that those wildlife managers that manage that area are given, I think, a quota of birds to be reduced, and that they develop a hunting pattern or a hunting blueprint that will allow America's sportsmen to come in and take the requisite number of birds that will allow the Arctic tundra to be saved, and to have that certain ratio or number of birds harvested from their particular area of responsibility.

So this has to be a partnership between lots of folks who haven't necessarily been partners before, and that includes the sporting community, the hunting community, the fishing community, and the community that's just concerned about wildlife, like the Audubon Society, the Humane Society, and other groups that want to see not only the snow geese survive as a species, but also the other 200 species of birds that Duke mentioned that also share that nesting ground. Every time an acre of Arctic tundra is permanently destroyed, it's destroyed not just for the snow goose, it's destroyed for every single nesting specie that utilizes that particular type of habitat.

So, Mr. Chairman, this bill urges Fish and Wildlife to move forward promptly, put this blueprint in place, and start this very, very important conservation process of bringing these numbers down to a biologically sustainable level and a manageable level.

Thank you, Mr. Chairman, and, incidentally, thank you for all of the great conservation work that you do in this House, and the great stewardship that you have undertaken for fish and wildlife not only nationally, in your role as chairman, but also in your home State of Maryland. I very much respect that record, I think you've got a great record there.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Hunter follows:]

STATEMENT OF HON. DUNCAN HUNTER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. Chairman, I would like to begin by thanking you for this opportunity to present testimony to your Subcommittee regarding the irreversible damage currently occurring in the tundra ecosystem of North America by the mid-continent lesser snow goose. As you are aware, this valuable international resource, which provides habitats for hundreds of different wildlife species, is in great danger of depredation because of overpopulation of these geese.

The mid-continent lesser snow goose is an Arctic-nesting waterfowl whose population has thrived in recent years as a result of increased agricultural and urban development and their ability to successfully exploit human modified landscapes. Whereas in most cases this would be viewed as successful wildlife management, in terms of the mid-continent lesser snow goose this emerging pattern has moved beyond desired levels to become an immediate threat to the very survival of this species.

Since 1969, the mid-continent lesser snow goose has been steadily increasing at a rate of 5 percent a year from 900,000 to more than 5,000,000 today. These geese forage by grubbing, or overturning soil, to reach the plant growth beneath the ground. This practice, coupled with the overpopulation, has caused severe environmental degradation to the Arctic ecosystem, almost rendering it useless for future plant growth. Fragile breeding grounds in Northern America, including the areas of Quebec, Ontario, Manitoba and parts of the Northwest Territories, have experienced irreparable damage to large areas of vegetation. Unlike most cases of wildlife population explosions where nature will balance species and habitat on its own, waiting for this to occur could be devastating. Current land-use practices have increased food supplies and reduced the winter mortality rate of these geese, thereby sending healthy birds back to breeding grounds where they continue to expand, destroying more and more of the North American tundra each season.

This overpopulation also increases the potential for outbreaks of disease and could cause a decline in other species that nest in these regions. This includes semipalmated sandpipers, red-necked phalaropes, yellow rails, American wigeons, northern shovelers and a variety of passerines.

The U.S. Fish and Wildlife Service has estimated that a decrease of one million geese, every year for the next several years, is what would be necessary to bring the mid-continent lesser snow goose population to one that is acceptable by wildlife managers. Taking this into consideration, the liberalization of many hunting frameworks is warranted. This includes modifying several current game-hunting regulations regarding baiting, electronic calls, concealment, bag limits and late-season expansion on and around state, provincial and Federal refuges. Additionally, an extension of the harvest of snow geese for southern hunters beyond the current restrictions (March 10) in the Migratory Bird Treaty should be considered as well. Though some conservation groups may consider these actions as severe, complacency can only be characterized as irresponsible.

It is for this reason that I, along with my colleague Randy "Duke" Cunningham, have introduced H.Con.Res. 175. This resolution expresses the sense of Congress that immediate action must be taken to address this growing problem. Specifically, H.Con.Res. 175 calls upon the U.S. Fish and Wildlife Service to utilize the most efficient conservation measures possible to reduce the population of mid-continent snow geese to levels that are consistent with sound biological management principles and, at the same time, prevent further destruction of the tundra ecosystem. This includes the development of a comprehensive management strategy, the liberalization of hunting frameworks and the modification of public land management practices. It is our firm belief that by taking these actions now, we can save the North American tundra and the mid-continent lesser snow geese for the future.

Thank you again for allowing me the opportunity to testify today regarding these important matters.

Mr. GILCHREST. Thank you, Mr. Hunter and Mr. Cunningham.

I think the group that has been assembled to look at this problem, to sit down and exchange information on solutions, and have a tolerance for each other's opinions, can go a long way into not only solving the problem of the devastation in the tundra, but continuing to understand the balance of nature, how ecosystems work, and how we, through human activity, can, for the most part, have a positive impact instead of a negative impact. So I really appreciate your effort and your work on this.

Duke?

Mr. CUNNINGHAM. Thank you, Mr. Chairman, and I've given Mr. Farr the copy of the book that we entered into the record, but you can see just how devastating this has been to the ecosystem. The revenue from the additional permits to harvest these birds could be used for not only to save the land itself, it can be used—like, as I mentioned, as feed plots—it can be used to recondition the land and to even purchase other lands, which I think is very important also.

On a personal note, I don't know if the chairman's aware a good friend of yours, Joe Judge, in which these Canadians affect the crops on the Eastern Shore of Maryland, has been diagnosed with cancer.

Mr. GILCHREST. Joe?

Mr. CUNNINGHAM. Joe is undergoing chemo and radiation treatment. He is a good friend of yours as well as ours, and I didn't know if you were aware of that.

Mr. GILCHREST. No, I wasn't. Thanks, Duke, for telling me that.

Mr. Farr, any questions for the witnesses?

Mr. FARR. Yes, Mr. Chairman. Thank you. I notice in the resolved clause og H.Con.Res. 175, that it is the sense of Congress of the United States, that the Fish and Wildlife Service, together with its State flyway council partners should take action. Do those council partners include the Canadians? Are they in on this?

Mr. HUNTER. Yes, this is intended to take in the Canadians and the Mexicans, because Mexico, to some degree, hosts populations of snow geese. But primarily, our overall plan is intended to work with them, Mr. Farr. In terms of managing our conservation practices, however, whether we extend limits, whether we liberalize the hunting areas, or extend seasons, for example, that's something that we can't affect in Mexico and in Canada. In other words, they are working with Canadians and Mexicans right now, but in terms of us coming up with a conservation plan that we can oversee, it can only be done in the continental United States. That's where our jurisdiction is.

Mr. FARR. As you know, I have no duck in this hunt. But the issue here, I think, is that the problem is a tundra problem, degradation of the tundra in Canada. And then you're suggesting that this selective reduction of the flock is the solution—using more efficient technology, and including modification of management practices—which essentially we control on our ground in this country. It gets back to the issue of how much of the tundra is being damaged—and how you're really going to solve the tundra problem. If that is the problem, then where is the causal connection that——

Mr. HUNTER. Well, here——

Mr. FARR. Needs to be there. The article you just gave me also says that weather has a lot to do with it. If you're going to allow more egg harvesting and collection, then maybe you don't have to reduce by hunting. Also, do the revenues derived from this hunting go back into this effort, or do they stay with the States that sell the hunting license?

Mr. HUNTER. Well, here's what you have. First, the hunting license thing, we have a Federal duck stamp that you buy if you're a hunter. That Federal wildlife stamp was introduced back in the 1930's, and that goes to Federal wildlife projects. So we can have—so you have increased moneys that come back through the waterfowl stamp process, and the more people who are enjoying that sport, the more revenue you have.

But my point is that the snow geese are a product, really, of the great grain harvests and grain planting in the United States in the Midwest. This is a mid-continent, lesser snow goose problem. The snow geese in my State in California come from the Wrangell Islands, and that's—they're a stable population right now. What has happened is that we have these enormous grain harvests right now, as a result of our agriculture practices. So these birds come back to the Hudson Bay, in another country, in incredibly good condition. You have very little winter mortality or spring mortality because they come back very big, very strong, very robust, because they've been eating prime American grain all the way down the flyway. As a result of that, they have big broods, and so you had this increase from what was considered the stable population in 1969 of 900,000 snow geese, to over five million today.

They've increased their numbers by 500 percent. So, while the effect is in another country, that is the total destruction of about 10 percent of the tundra around Hudson Bay to date—and, we're afraid, permanent destruction—the cause is the great grain factories of the United States that send these birds back to their nesting ground in extremely robust condition, and the result of that is having big hatches.

Now, the Canadians tell us they may have to start poisoning. They don't want to lose these nesting grounds either, they don't want to lose the tundra. And, once again, the tundra's not something that can be replaced somewhere else, like you can replace a marsh, or you can mitigate the destruction of wetlands. So the only way to take these birds in a way that they can be utilized, that is where the meat can be used, is by hunters and their families—I'm a hunter myself, it's a tradition in my family. On Thanksgiving dinner, for example, we'll often have all wild game. American families, and the chairman can vouch for this on the Eastern Shore, American families enjoy their wild game. Snow goose is good to eat, and, you know, it's as much a product of our grain fields in the Midwest as the geese, as the domestic geese and turkeys and ducks that we raise domestically. They're very good eating.

What we can do is take these excess birds and have a program where if you come off of a refuge, and that refuge has taken, say, a thousand snow geese in a given period of time, they can have Food for the Hungry. Many sportsmen have food for the hungry programs, we have a number of them throughout the United States, where if you don't want to take back five or 10 snow geese, if that's more than your family needs, you deposit with the Salvation Army or another entity these snow geese, and they help to feed hungry people. So we don't waste them. That's a lot better than poisoning them in the tundra.

Mr. FARR. I don't think I disagree with a lot of the things you've said, but what the bill really speaks to is the tundra ecosystem problem.

Mr. HUNTER. Yes.

Mr. FARR. But most of your statement addresses the need to increase the hunting of these geese. Can you tighten this bill? You told me just now, in your statement, that the problem wasn't a California problem. But the bill says that you could modify the management practices on public lands for any lesser snow goose. Is that what the name of these are?

Mr. HUNTER. The mid-continent doesn't exist in California. Ours are from the Wrangell Islands in California.

Mr. FARR. But your bill doesn't speak to that.

Mr. HUNTER. Well, I mean, the only place where you're going to manage them is where you have the problems. I mean, what we're doing is we're urging Fish and Wildlife to develop a blueprint and execute the blueprint. And what Fish and Wildlife will tell you is there's about a dozen refuges in the Midwest that have enormous populations of snow geese during the migration—the winter migration. And if they develop a plan whereby they direct a refuge manager to harvest so many birds on that particular piece of land, and you have that as part of a bigger blueprint, then that will achieve an overall reduction.

So the answer is, Sam, the way that you effect the reduction in the flock—there's only two ways that it can be done. One is to take the snow geese when they are—and increase the harvest, which right now is about, between 400 and 500,000 birds a year, which is not enough. Increase that harvest to several million, and utilize the meat for people who like to eat it, which is a reasonable thing to do; or poison the nesting ground, which is what some Canadians are proposing. We think that's the most repugnant of alternatives, but if we don't do something, we're going to be in trouble.

Mr. FARR. Your bill says, though, that you should use the most efficient technology. You might say that poisoning them is more efficient technology than hunting them, which, I don't think you want to do.

Mr. HUNTER. Well, you know, we put technologies—see, that addresses the Lower 48. I would—we're trying to give some discretion to Fish and Wildlife. But, I'll tell you, if Fish and Wildlife said, we're going to poison birds on refuges, let me tell you this is one Member who would be moving immediately to try to stop that. I think that would be terrible.

Mr. CUNNINGHAM. Sam, one of the problems, if you use that technology, it may not be the most efficient, because you're going to poison birds besides just those that the other species that are there. And that's why we reject the Canadian plan.

Mr. FARR. What I'm trying to do is tighten your bill so that it has more of causal connection. This is a general hearing on the bill and not a mark-up, isn't it?

Mr. GILCHREST. A general hearing, Sam.

Mr. FARR. OK, then——

Mr. CUNNINGHAM. Listen, we're willing to hear all kinds of things, and I think the bottom line is if we affect the population in the United States, and in Mexico, when they do go back up to the tundra, that there's lesser numbers to proliferate the tundra up there.

Mr. FARR. I've always supported game management. I think we've done it well in California, in big horn sheep. There were battles in the State legislature when I served there, and we always tried to make it, you know, practical management. In California, the State you're both from, we don't do these trophy fees, because our State constitution says that the game belongs to everyone. So you can't, for example, auction off a hunt for very high fees, which other States have been able to do. I don't know whether that's good or bad.

I think the more revenue you can turn back into the whole fish and game management system the better. I'm not a hunter, but I support the duck stamp program. Do you want to bring that revenue back into it?

Mr. CUNNINGHAM. Oh, yes.

Mr. FARR. Are you sure that this is tight enough to do what you want to do?

Mr. CUNNINGHAM. Yes, yes, we are, and that revenue is used even today. This just increases the revenue for ecosystem management and good conservation practice. Another question you had when we spoke up there is, how do you know, first of all, in say the Salton Sea, I'm not going to be shooting this kind of goose, because it's not there. I do know a story—matter of fact, I was on the Eastern Shore with my friend the chairman, and a gentleman walked up to the game warden, and he had a goose whose neck hung clear to the ground. Well, it wasn't a goose, it was a swan, which is totally illegal.

Another area was in the California newspapers, the gentleman asked the ranger, said, if I catch a deer, can I keep it? Well, of course, they laughed and said, yes, if you catch a mule deer, we'll let you keep it. Well, they went out to the truck, and this guy had stolen some farmer's goat, thought it was a deer. I mean that problem, you're never going to get rid of, but most of the people who hunt are aware of the actual species, and these, you know, are very difficult birds to hunt, and they're in specific areas, so it makes it much easier to have a management plan.

Mr. HUNTER. Sam, also, I understand what you're trying to do, and that's to put some specifics in this thing that make it tighter. What we intended to do here was to, because we think the Fish and Wildlife are fairly efficient and effective in their business, was to given them broad discretion. But certainly what I intended when we put in this language technological capability was things like, for example, these noise machines that would scare the geese if they were congregated in a particular area and you couldn't harvest them. Fish and Wildlife could go in and put in some type of noisemakers that would disperse them so that they could be harvested. But certainly I didn't contemplate poisoning.

My point is that it's your bill now, and if you folks think that specific directions are in order to Fish and Wildlife, we're certainly in accord with that. This is going to take a lot of common sense, Sam. I think with our Fish and Wildlife experts here in Washington sitting down and listening, I think they need to listen to the wildlife managers throughout the Midwest, and kind of ask them their opinion. How many birds should we take per refuge, how do we best get the story out to the farmers, what kind of program do we have to make sure no meat is wasted, and do that type of thing.

And U.S. Fish & Wildlife were consulted, my staff reminded me, we talked with them a lot before we put this together. They wanted a broad brush, broad mandate, if you will. And, as you know, we do that sometimes with agencies we really trust. Other agencies, we write everything down in the fine print. And I've always thought of Fish and Wildlife as an agency that has quite a bit of common sense and can figure this out if they come to the conclusion that Congress has a mandate to reduce these populations, and that we're behind them.

But if you think, if the Committee in its wisdom thinks that more detail is needed, and specific direction is needed, we're not adverse—we're not against that.

Mr. CUNNINGHAM. One other thing I'd say to my colleague, Mr. Farr. There's a provision, or one of the recommendations I totally disagree with, and it's more practical than anything. And that's to increase the number of shells you can hold in the magazine. Right now, almost any wild birds you hunt, you can only carry three shells. You have to have a plug in your shotgun, unless you've got an over-and-under, which you only carry two, or a side-by-side shotgun.

The practical reason is I know that quite often when you're hunting snow geese, there are other geese or other birds. You can hunt ducks, for example. Which says you can only have three shells in your gun. If you've got somebody next to you that's got ducks in the blind, and you've got somebody that's got snow geese in the blind, a game warden can come up and say, hey look, and fine the guy that doesn't have three shells in the chamber. I see a problem there, or even taking your shotgun hunting goose one day, and going out and shooting quail or something the next day, and forgetting to put the plug back in your gun. I think you're going to have excessive violations because of that, and not what this intended for. So there's different areas in there I think we can tighten up.

Mr. GILCHREST. Thank you, Mr. Farr. Gentlemen, I appreciate your testimony.

I'm just going to make one quick statement that I've read that might help Mr. Farr out a little bit as far as the process, and how we work with the Canadians.

The Canadian ambassador to the United States, I'm not sure if I'm going to pronounce the name right, Raymond Chrétien. I'll just read two of many statements. "Some of the more extreme ideas, such as the use of chemicals delivered into breeding colonies by aircraft are clearly unacceptable. From considerations of humaneness, damage to non-target species, and ineffectiveness of the use of the chemicals." And then he goes on to describe some of the more traditional ways of reducing or managing this particular type of wildlife.

I think there's been a number of suggestions made here today, or at least some comments have been made here today about the management of this huge volume of snow geese. But what I see coming out of, at least the United States and Canada, and I'm sure Mexico as well, are those kinds of traditional ways to manage a flock, manage wildlife, while protecting the other species, and also protecting the ecosystem in general. So I think we're moving along pretty well.

And, gentlemen, thank you very much for coming this afternoon. Mr. Hunter and Mr. Cunningham, you're welcome any time in Kennedyville.

Mr. CUNNINGHAM. Thank you, Mr. Chairman.

Mr. HUNTER. Thank you very much, Mr. Chairman. Is the canoe still in the loft?

Mr. GILCHREST. The canoe is still there, Duncan, it's right down there.

Mr. HUNTER. OK.

Mr. GILCHREST. You just beware of the beaver.

[Laughter.]

Mr. HUNTER. OK.

Mr. GILCHREST. The next panel will be Mr. Paul Schmidt, Chief, Office of Migratory Bird Management, U.S. Fish and Wildlife Service; Dr. Rollin Sparrowe, President, Wildlife Management Institute; Dr. Bruce Batt, Chairman, Arctic Goose Habitat Working Group and Chief Biologist, Ducks Unlimited; Mr. Roger Holmes, Chairman, Migratory Wildlife Committee and Vice President, International Association of Fish and Wildlife Agencies; he's accompanied by Mr. Richard Bishop, Chief, Bureau of Wildlife, Iowa Department of Natural Resources; Dr. Frank Gill, Senior Vice President, Science, National Audubon Society.

Gentlemen, I appreciate your attendance here this afternoon. I would ask the indulgence of the witnesses if Dr. Rollin Sparrowe may go first with his testimony, because he has to leave at three to catch an airplane. Dr. Sparrowe.

STATEMENT OF ROLLIN SPARROWE, PRESIDENT, WILDLIFE MANAGEMENT INSTITUTE

Mr. SPARROWE. Thank you, Mr. Chairman. The Arctic nesting goose stakeholders committee is a distinct group from the working group that filed the major report that you were discussing earlier. My primary role in testifying today is to clarify the nature of that group and its deliberations, and its contributions. I have included the report of that stakeholders group as a part of my testimony for the record. It includes, I think, some interesting perspectives from a wide array of participants.

I want to point out that this was not an official group representing any entity. Because this issue became one of considerable interest, I asked a group of people to come together on an international basis to discuss it at some length. Our Institute often serves as kind of a gathering place for discussing issues such as this. Participation was voluntary; the expenses were paid by each of the participants; and while not everyone who was asked to participate did, nor did we ask every group across both Canada and the United States, we had a wide array of interest groups directly involved. We communicated with many others by issuing drafts and our final report. I believe the participants included a very wide array of viewpoints, and that everyone had a considerable opportunity to look at the information base and respond to it.

The basic information used by the participants included the report, "Arctic Ecosystems in Peril, a Report of the Arctic Goose

Habitat Working Group.” But, probably more importantly, the working group, the stakeholders committee, had access to all of the experts, key scientists from both the United States and Canada, on several occasions to hear detailed briefings about the substance in the basic reports and research findings, and to ask any questions and have interchange as they wished. We provided extra evening briefings for those who caught up with us late in some of the meetings, so that everyone was on an equal basis of information.

This included the Fish and Wildlife Service, the Canadian Wildlife Service, the Animal Damage Control people from USDA, representatives from three of the flyway councils, the American Museum of Natural History, Ducks Unlimited, and any other organizations.

I think it’s important to note that the stakeholders committee didn’t treat this as a hunting issue. This is an issue of a wildlife population grown beyond the capacity of its habitat. The information we saw in reports and was presented to us by the various experts generally convinced this stakeholders committee that there is a serious problem that requires direction action that should begin now.

The group concluded that the degradation of habitats around Hudson Bay is well documented, and affects not only geese, but many other species. They called for a long-term plan that includes both habitat measures on migration and wintering routes, as well as attention to the size of the population. In general, the stakeholders group endorsed the intent of the larger working group report, to make a sizable reduction in the population as a major part of the management activity. At the same time, there are habitat management plans being drafted for work on migration and wintering areas, and I’m sure that you will hear about those in testimony from others on this panel.

Hunting was recognized as one of the most cost-effective tools available to managers, if employed in concert with other actions. While there were some specific actions about hunting practices which were recommended for consideration and are in the report that I have filed as part of my testimony, all of those actions would occur only through legal, public processes, and the stakeholders groups, each organization, reserved the right to look at any specific action proposed by the agencies and respond to it.

Finally, the key question asked in the invitation to speak was “why not allow nature to take its course?” On balance, the stakeholders committee found that this indeed is not a naturally occurring problem, and they felt that allowing lesser snow geese to continue to expand unchecked and literally eat their breeding habitat, and then presumably die off in large numbers, would be irresponsible. Many experts believe long-term habitat damage would likely be so severe that natural recovery could not occur.

While hunting programs are not guaranteed to solve the whole problem, they have been the key to reducing or building other goose flocks in America. They address adult survival directly, which is a key biological and management fact. Mr. Chairman, the stakeholders committee will likely reconvene in the future to examine progress. A continued involvement by a wide array of groups seems to be a healthy thing to watch this very difficult management problem evolve. Thank you.

Mr. GILCHREST. Thank you, Dr. Sparrowe. It's five to three, so at any time if you wanted to, we appreciate your testimony, but we don't want you to miss your plane.

Mr. SPARROWE. Thank you.

[The prepared statement of Mr. Sparrowe may be found at end of hearing.]

Mr. GILCHREST. Mr. Paul Schmidt.

STATEMENT OF PAUL SCHMIDT, CHIEF, OFFICE OF MIGRATORY BIRD MANAGEMENT, U.S. FISH AND WILDLIFE SERVICE

Mr. SCHMIDT. Good afternoon, Mr. Chairman, and thank you for your support in this conservation effort, as well as others. Today, I'm, as you indicated, I'm chief of the migratory bird management program for the Fish and Wildlife Service, and here to talk about the challenge we have in front of us.

North American geese are a natural resource, as you know, of enormous economic and social value. In fact, migratory game bird hunting alone, economic activity is over four billion dollars annually. And that doesn't include the billions more contributed to local and regional economies from birdwatchers and other non-consumptive use.

But the challenges we face in the management of over twenty populations of geese are fairly significant these days. And, in fact, we have a case of—in some cases too many, and in some cases too few. The overabundance of this mid-continent lesser Canada snow goose is one of the more critical challenges we face. That population, as you're aware, has increased substantially since 1969 to now between four and a half and six million birds. The Service believes that the snow goose population has exceeded the carrying capacity of its breeding habitat, and the population must be reduced the avoid the long-term consequences that we're already seeing. That includes impacts to other species and the ecosystem in general.

An indicator of the degradation is a narrow strip of 1,200 miles of prime nesting habitat along the west Hudson Bay. Of this 135,000 acres, 47,000 acres are considered destroyed, 41,000 damaged, and 47,000 heavily grazed. Other Arctic habitats may be suffering the same fate, as existing snow geese colonies expand and new colonies are established.

The Service believes that population control by hunters should be considered before using more direct control measures, such as trapping and culling commercial harvest, and other methods. These more direct control methods may be necessary, but should be only considered after it's been proven that these changes to the migratory bird regulations have not been successful. These direct control measures are highly controversial and costly.

The Service has been trying to stabilize the growth of this population for some time. Back several years ago, the Service increased the bag limit on snow geese in the mid-continent area to 10 birds, expanded the season to 107 days. Although the harvest has not increased sufficiently to reduce the population growth rate, the Service believes that this management tool still has the potential to be effective if it's aggressively expanded. The Service believes this management intervention is necessary and a credible alternative.

Without that, we're going to continue to see degradation of the habitat and other wildlife species affected. Research has already shown the decline of other bird populations in some of these badly degraded areas. It's possible that the snow goose population itself could have a crash and go down to extremely low levels in the future.

During the last year, we've been in significant consultations with our U.S. and Canadian partners in the States and Federal agencies, and discussing with also non-governmental experts. We've been developing regional action plans, and an evaluation and monitoring program that would be helpful to monitor our progress in reaching the goal of a reduced population.

Our work to document the problem, and in consultation with stakeholders, combined with the recent media attention, has created an environment where the need for responsible management action is recognized, both within the conservation community and the general public. On April the 6th, the Service published a notice of intent, announcing our plans to prepare an environmental assessment to review migratory bird regulations with the intent of reducing the snow goose population. In this assessment, we are considering strategies to implement population control measures to increase the take of snow geese outside of the normal season. The Service will have a draft environmental assessment and a proposed rule available later this summer, and our goal is to have a final rule published in January, 1999. If those final regulations are approved in early 1999, this population control measure would be in place for the spring, before the geese return to the Arctic.

In closing, I'd like to put this in a little larger context. Some of you have already mentioned this. We face some significant challenges in goose management throughout the country. While we're focusing today on snow geese, other goose populations are increasing at rapid rates as well, including the resident Canada geese that are mentioned along the east coast and throughout many parts of the United States, and the greater snow goose along the Atlantic flyway. On the other hand, a number of populations—the dusky Canada goose in the Pacific flyway, the Atlantic population of Canada geese, and the threatened Aleutian Canada geese—require careful management to protect and/or restore these populations.

Given the reality of limited personnel and funding, and the increased complexities I've mentioned, we have never faced bigger challenges in goose management than we do today. But the Service is committed to working with our State wildlife partners, the Canadian wildlife authorities, and the stakeholders to address the critical issue of the overabundance of lesser snow geese.

At this point, I'd just like to thank you again for the opportunity to testify, and to answer any questions you might have.

[The prepared statement of Mr. Schmidt may be found at end of hearing.]

Mr. GILCHREST. Thank you, Mr. Schmidt.

Dr. Bruce Batt.

STATEMENT OF BRUCE BATT, CHAIRMAN, ARCTIC GOOSE HABITAT WORKING GROUP AND CHIEF BIOLOGIST, DUCKS UNLIMITED, INC.

Mr. BATT. Thank you. Good afternoon, Mr. Chairman and members of the Subcommittee. My name is Bruce Batt. I'm the chief biologist of Ducks Unlimited, headquartered in Memphis, Tennessee.

For the past two years, I have served as the chairman of the Arctic Goose Habitat Working Group, which was formed to examine the issue of overabundant mid-continent lesser snow geese. The working group consisted of 17 scientists, water fowl managers, and academics who came together to examine all the information that was available on the status of the snow goose and the ecological consequences of their rapidly expanding population.

We completed our report, which you heard about today, entitled Arctic Ecosystems in Peril in October, 1996 and published it for general release in February 1997. The title of the report was coined after we completed our work, and came to realize just how disastrous the extraordinary abundance of snow geese was to the Canadian Arctic breeding grounds around Hudson Bay. We concluded that the extraordinary population growth is being driven by several human-caused factors.

The most significant is a tremendous expansion of agriculture through the mid-continent and Great Plains region of the continent. The abundant agricultural foods exploited by the geese on the Great Plains assure that year in and year out, more birds survive through the wintering period to go back north in excellent physical condition to breed than was likely ever the case in pre-settlement days.

The second key factor was the establishment of many private, State, and Federal wildlife refuges, which are designed to protect migrant and resident wildlife. Refuges are at the heart of many of today's wildlife conservation practices, but snow geese have an uncanny ability to recognize and exploit refuges, and they have done so with gusto. Many refuges provide safety for hundreds of thousands of snow geese, where their most significant predator in modern times, the hunter, is excluded.

A third factor related to the birds' use of refuges is their unequaled ability to recognize a hunting situation and successfully avoid it. After more than a decade of modifying hunting regulations to increase the harvest of snow geese, it is clear that with the traditional hunting methods and timeframes, hunters will not be able to arrest the persistent growth of the population.

The last factor is a moderate change in the climate that has resulted in generally warmer temperatures and a longer ice-free season in the summer, when the birds breed. This results in fewer unsuccessful breeding seasons that previously helped to check population growth.

Their massive numbers put such a high demand on the limited food supplies that vast tracts of the Arctic have been converted to highly saline, bare soil where few plants can grow, virtually none of which are used by the geese. This is similar to ecological processes to what is occurring on vast tracts of the African continent, where desertification is causing the destruction of arable soils and the growth of the desert in that area.

The destroyed marsh will take many decades to recover, at least most of the next century, and scientists are uncertain if some tracts will ever recover. More northern areas do not appear to be damaged as much yet, and population growth on the larger scale is probably fueled primarily by increases from those areas.

But this is a bigger story than just the effects of the geese. This is an ecosystem in peril. All the other wildlife and plants that live in this ecosystem will also be decimated as it is destroyed. The migratory birds are the most spectacular and most abundant. All of them migrate through Canada and the United States between breeding and wintering areas. Many winter in Central and South America, and they are truly important treasures of the rich bird fauna shared by all the Americas.

The working group recommended that this unnatural phenomena be arrested by strong goose-population reduction measures to bring the numbers to a level that can be sustained by their ecosystem. We projected that this would mean reducing the numbers by half, and we urged that this reduction would take place by the year 2005.

It is not possible to be certain that a 50-percent reduction is needed, or that it is enough, as this problem has never been encountered before. Thus, we recommended that any population reduction program should be accompanied by an extensive monitoring system to measure the changes in the ecosystem so that the point at which the stable number was achieved would be recognized and the control measures would be stabilized.

The Arctic Ecosystems in Peril report has been made available to the scientific community for their review for over a year now. It was a prominent topic at the largest ever gathering of the world's goose biologists last January in Victoria, Canada. It has survived this scientific scrutiny, with the only debate focusing on just how many geese will have to be removed from the population to establish a sustainable level. There is little disagreement in the scientific community about the causes of the problem, or the consequences of continued population growth on the ecosystem, on the geese themselves, or on other species that will suffer collateral damage.

The snow goose crisis has been subject to hundreds of newspaper, magazine, radio, and television pieces. These have stirred virtually no negative responses from the public as to the importance of reducing numbers to a more sustainable level. Communications have been thorough, balanced, and accurate, and the message is scientifically defendable. In short, the scientific community and the public are well informed and well prepared to address this issue with a strong and asserted effort.

As we have worked so diligently to change the face of North America to support our agricultural, urban, and rural enterprises, wildlife has responded in a variety of ways. Many species have been reduced in number and distribution, and we have come to grips with serious issues like endangered, threatened, and extinct species. The on-going commitment to those needs will assure many successes in the future. However, overabundant species are the other end of the continuum of how species respond to the new landscapes that we have crafted. They demand an equally effective commitment to their management.

Thank you, sir.

[The prepared statement of Mr. Batt may be found at end of hearing.]

Mr. GILCHREST. Thank you, Mr. Batt.

Mr. Roger Holmes.

STATEMENT OF ROGER HOLMES, CHAIRMAN, MIGRATORY WILDLIFE COMMITTEE, AND VICE PRESIDENT, INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES

Mr. HOLMES. Yes, thank you very much, Mr. Chairman, for the opportunity to share the perspectives of the International Association of Fish and Wildlife Agencies. I would point out that I am currently the vice president of the International, and I also have served as the chair of the International's Migratory Wildlife Committee for the last 8 years. I'm also the director of the Division of Fish and Wildlife for the Department of Natural Resources in the State of Minnesota, and prior to that served as the section chief and started out 40 years ago as a water fowl habitat biologist with the State of Minnesota. During my tenure with the Minnesota department, I served on the Mississippi Flyway Council for 22 years.

I'd like to point out particularly, in response to a question earlier, that the International Association is just what it says, an international agency that has in its membership all 50 States, plus all of the Canadian provinces, and also Mexico. So, as an international association, all three countries that have a piece of this problem have been involved in considering the solution, and it would certainly be our expectation that all three countries would be involved in any of the procedures or programs that could be implemented.

I will skip over most of my testimony because other people have covered it. I would like to highlight a couple of things, however, and, as has already been commented on, there were several mentions of the report, Arctic Ecosystems in Peril. And I would only point out here that, of the working group members, six of those people were in fact representatives of Canada, so that the chair and the committee is aware of the fact that there has been a considerable amount of Canadian input into this issue, and particularly into this report.

I would point out too that under recommendations, there are a number of recommendations that came out of this report that are in my testimony, and I want to highlight the first five.

The first one is the United States and Canadian government should permit a conservation harvest of white geese between March 11 and August 31 where and when appropriate. And it says white geese——

Mr. GILCHREST. Would you give those dates again, please?

Mr. HOLMES. Between March 11 and August 31. And any kind of a white goose. Any kind of harvest directed that these geese would involve not only the mid-continent snow geese, but also the greater snow geese, and probably include Ross' geese also. All three populations of which are at very high levels. And in a hunting situation, it's virtually impossible for hunters to distinguish between those different species, and all three of them would be harvested.

The second recommendation is that subsistence harvest, including egging, should be encouraged in Canada, where appropriate.

No. 3, the survival and productivity of lesser snow geese should be reduced through the appropriate management of public lands, including State, Federal, and provincial refuges and, where appropriate, on private land.

No. 4, the U.S. Fish and Wildlife Service and Canadian Wildlife Service should consider allowing the use of electronic callers.

Five, the U.S. Fish and Wildlife Service should consider increasing bag limits and possession limits.

I'll read No. 6 too. The various governments are encouraged to develop mechanisms to facilitate snow goose hunting between jurisdictions.

Also, commented upon earlier, was the fact that the U.S. Fish and Wildlife Service has published a notice of intent on April 6 regarding this issue, and the International strongly supports the statements that are made in that notice of intent.

I want to address another issue here that has not come up yet, and that is that it must be recognized that there is a distinct lack of funding for goose management programs. The need for better biological data through monitoring programs, habitat management, and other forms of population management is increasing. The joint flyway councils have recommended a budget increase of approximately $10 million to adequately address goose population monitoring, management, and research needs.

And, Mr. Chairman, the International did write a letter to the chair of the Interior Appropriations Committee, the Honorable Slade Gorton, and perhaps what I should do is provide you with a copy of that and enter it as a part of the record. It is dated March 30, and it was signed by our executive vice president, R. Max Peterson. And that specifically requests this $10 million—and I'd like to draw that to your attention, because a program like this does require funding, and the estimate that we have is it's going to take about $10 million to do the proper evaluation, the monitoring, and the habitat improvement and so forth to try to address this problem.

Mr. GILCHREST. That's a letter from Senator Gorton?

Mr. HOLMES. It is to him——

Mr. GILCHREST. To him.

Mr. HOLMES. From our International Association.

Mr. GILCHREST. We'll enter that into the record.

[The information referred to may be found at end of hearing.]

Mr. HOLMES. Then, Mr. Chairman, in conclusion, the Association firmly supports the recommendations contained in the Arctic goose stakeholders report, and I would urge the Subcommittee to support increased funding. As I've said, I would also like to point out that we have a person who's served on the stakeholders committee, and he's on the end of the table here, but his sign is right here, Mr. Richard Bishop. So if you get us confused, he's the chief of the Bureau of Wildlife from the State of Iowa. We've talked about mid-continent snow geese, and we are definitely from the mid-continent, and we're very concerned about that entire problem, and that's why we are here.

Thank you very much.

[The prepared statement of Mr. Holmes may be found at end of hearing.]

Mr. GILCHREST. Thank you, Mr. Holmes. I guess you're about as mid-continent as you can get.

Mr. HOLMES. That's correct.

Mr. GILCHREST. Dr. Frank Gill.

STATEMENT OF FRANK GILL, SENIOR VICE PRESIDENT, SCIENCE, NATIONAL AUDUBON SOCIETY

Dr. GILL. Thank you, Mr. Chairman. I appreciate this opportunity to appear before the Subcommittee to testify about the detrimental impact of the snow goose situation in the Arctic. I am the senior vice president and director of science of the National Audubon Society, and I am also the president of the American Ornithologists Union, the country's foremost society of professional ornithologists. With me is Miss Genevieve Thompson, the executive director of North Dakota's State office and, like Iowa, she's right on the front lines of the mid-continent problems.

The National Audubon Society is one of the nation's leading environmental organizations. We have over half a million members organized in 520 chapters throughout the U.S. and Central America. Our members love and are concerned about birds, wildlife, and their habitats, and many of our members are sportsmen as well as birdwatchers.

Audubon's involvement in the snow goose issue has included representation on the Arctic goose habitat working group, participation in the excursion to Hudson Bay lowlands coordinated by the joint venture management board, and representation in the stakeholders committee on Arctic nesting geese that you have just heard about. The National Audubon Society endorses the recommendations of the Arctic goose habitat working group, the international team mandated to document scientifically this urgent environmental problem.

We are here today to publicly state the unanimous resolution of the board of directors of the National Audubon Society to protect wildlife habitat and ecosystems in the Arctic, and sub-Arctic, which are currently under threat from damage by the burgeoning populations of the lesser snow goose. The board voted in September 1997, last fall, to support the recommendations of the Arctic goose task force to reduce the mid-continent population of the lesser snow goose through expanded hunting and other means.

Mr. Chairman, you have our written statement, which I won't repeat here. Let me just summarize, quickly, four main points. First, Audubon's concern in this situation is in line with our mission to protect birds, wildlife, and their habitat, using the best tools available. We view this as a habitat issue, not a hunting issue.

Second, we are convinced of the reality, and the severity, of the problem, namely these geese are a major threat to a critical habitat on which many other species depend.

Third, this is a problem of our own making. It's well documented. We understand what's happening. To some degree it was a conservation success, and we have to learn how to manage conservation successes. And, given that it is a problem of our own making, we have a responsibility to address and correct it as soon as possible.

Finally, we look forward to working with government agencies and the sportsmen's groups to define all reasonable options, and to implement them as soon as possible to bring the system back into balance.

Mr. Chairman, I thank you again for providing us with the opportunity to testify today. We are available to answer any questions you might have. Thank you.

[The prepared statement of Dr. Gill may be found at end of hearing.]

Mr. GILCHREST. Thank you, Dr. Gill. I think I'm going to start with Dr. Gill, and ask you to elaborate on your statement that this is a habitat problem, not a hunting problem. Do you have any specific recommendations on how—would you agree that the population needs to be reduced? What would your specific recommendations be to reduce that population? And does it include any increase in hunting at all?

Dr. GILL. We are not opposed to hunting as a solution. In the Audubon family, there are issues about hunting versus non-hunting, but in the board discussion about snow geese, it emerged that we're talking strictly about a habitat problem. Hunting is one of the tools we can use to solve that problem. So we are not opposed to the options under discussion as tools to solve a major habitat problem.

Mr. GILCHREST. One of the recommendations from Mr. Holmes was to—and I don't know what I did with it up here in my mess—was to expand the hunting season, was to include the hunting season, or make March 11 through August 31 part of the hunting season, which, I suppose, would have to have the Migratory Bird Treaty Act changed. Would you agree that an expansion of any type or any length of the hunting season would be necessary to manage the snow goose population? Dr. Gill.

Dr. GILL. I'm sorry. Could you repeat the last part of that question?

Mr. GILCHREST. It's my understanding that part of the management of reducing the snow goose population, as recommended from the Audubon Society, is hunting. That's a part of a management tool. Would you agree with some of the recommendations, specifically with Mr. Holmes, that the hunting season should be expanded?

Dr. GILL. Well, I'm in charge of science, not policy, so I may be getting myself into trouble here. But Audubon's position is that that would be a reasonable option.

Mr. GILCHREST. It would be a reasonable option?

Dr. GILL. Yes.

Mr. GILCHREST. It's my understanding, I guess, Mr. Schmidt, that the Migratory Bird Treaty Act of 1918, in order to accommodate some of the changes that have been discussed here today, would have to be amended.

Mr. SCHMIDT. Actually, it's likely it would not have to be amended. The Migratory Bird Treaty itself underwent an amendment process a couple of years ago and the U.S. Senate has endorsed that. We're waiting for final exchange of notes that would indeed—some of the amendments that were made would indeed open up the opportunity for us to take specific management actions on a conservation issue such as this one.

Mr. GILCHREST. Where is that proposed change now, with the State Department?

Mr. SCHMIDT. Yes, sir.

Mr. GILCHREST. What are they likely to do with it?

Mr. SCHMIDT. The next step is to exchange instruments of ratification with Canada and Mexico in our two bilateral treaties. We would expect that to be done in the near future, but I can't represent their timeframe on that.

Mr. GILCHREST. What's that? Always a diplomat, that's good. Are you referring to me, or Mr. Schmidt?

[Laughter.]

Mr. SCHMIDT. That's the first time I've been called that before.

Mr. GILCHREST. Well, you have a future outside of Fish and Wildlife.

Any one of you can answer this question. Can you describe in some detail the long-term consequences of permanent habitat destruction of the tundra?

Mr. SCHMIDT. The long-term, in terms of the Arctic, the damage that we have seen to date and documented by Dr. Batt's report would suggest that recovery of some areas may be longer than human lifetimes. As the studies were discussed by Congressman Hunter, there have been areas that have been excluded from goose use for up to 15 years, and virtually seen no regeneration of the tundra. And so we don't know how long it will take, but it's not like in the temperate areas that we're used to here, where recovery of habitats can be fairly quick, in a matter of years. I think we're looking at recovery of some of these area—if we can keep geese off of them—in terms of decades, and not years. So that's significant.

Mr. GILCHREST. In those areas that have been destroyed, if the goose population can be kept out, is there any possibility of reseeding? Does that work up there?

Mr. SCHMIDT. There are research efforts underway to look at that possibility through the use of artificial means, fertilization, et cetera. But it's a fairly costly exercise. Even if it becomes possible to do that, the expense associated with it would be tremendous, and we're talking about 100—excuse me, 1,200 of coast land in a very isolated part of the world to try to regenerate that.

Dr. GILL. Mr. Chairman, could I add to that?

Mr. GILCHREST. Please do. Yes, sir.

Dr. GILL. One of the threats, as I understand it, and these folks could correct me if I'm wrong, is that the grubbing far—the way snow geese eat and rip up the roots of the grass—allows salt to move into the system from below, and it changes the chemistry of the soil. Once the chemistry of the soil is changed, it allows and promotes the invasion of a salt-tolerant plant called Salicornia.

Once Salicornia has taken hold of these areas, it's there virtually forever, and hardly anything lives in Salicornia. It becomes a botanical desert, so there's a real transformation of the habitat.

Mr. GILCHREST. Where does the salt come from? Is it because this tundra is near the Hudson Bay? Is the salt likely to have this happen in the interior, away from the bay?

Dr. GILL. Bruce?

Mr. BATT. These soils on the coast are all former marine soils, and they're heavily laden with salts. And when the geese tear off the turf, they take away the insulation of the turf, and it warms it up, and that causes the evaporation rates to increase dramatically. And when it evaporates, the salt is left behind. It's the same thing as a pan of water that evaporates away and leaves a little residue. Well, it's the same on the coast up there.

And there's areas up there now that are two and three times sea-strength salt. That's how high they are. And not even salicornia grows there. Where salicornia grows, it's just—it's the only plant that can survive. Salicornia is 60 percent, by weight, salt, and nothing eats it. It has no nutritional value. It just happens to be something that can live there. So when it goes—but it can get too salty for salicornia also. And it eventually just becomes a big, baked mudflat that nothing grows on. And I guess, it's a bit of conjecture as to how long it takes to recover. If there were no geese, it's many decades into the future. Nobody's every been able to study this, no one's seen it, no one's lived long enough to witness this before, and we don't think it ever happened before.

Mr. GILCHREST. Do any of you—would any of you, representing your various groups, recommend, under any circumstances, poisoning?

Mr. BATT. We would not.

Dr. GILL. No.

Mr. GILCHREST. So, I—because it has been done in this country by Fish and Wildlife under certain, limited circumstances. So, can I assume that everybody up here, at least now, with the information that you have before you, you would not recommend poisoning?

Mr. SCHMIDT. I would say, with the information we have now, that's very correct. We would like to consider all other options possible before taking such dramatic actions as you've suggested, and the Service firmly believes there are—that we can be successful in this effort if we work together, Canada, the United States, even Mexico, as has been mentioned, in some of other ways besides the unacceptable poisoning that you've mentioned.

Mr. GILCHREST. Since this is predominantly a destructive problem in Canada, and I guess we don't have anybody here from Mexico, would the United States defer to Canada on the poisoning recommendation? Suppose Canada never recommended poison, suppose the United States felt, well, that the situation is so bad we may do it in North Dakota or Iowa or someplace. What would happen under those circumstances?

Mr. SCHMIDT. Let me see if I understand. If we recommended poisoning——

Mr. GILCHREST. And Canada didn't.

Mr. SCHMIDT. Canada didn't? Well, we—each are, obviously, sovereign countries and can indeed implement things, but typically the way we have managed migratory birds in this continent has been through a coordinated effort using the flyway system that involves the States and Canada, in particular. And our counterparts, we're in consultation with them virtually on a weekly basis on this issue and others, and I can't foresee that we would be out of step down the road with our partners in the north.

Mr. GILCHREST. Is the gathering of eggs in the springtime in the tundra—I know there's no silver bullet here, but is that a viable option to consider and to—and then how would you do that? Would you hire people to go out there and collect the eggs?

Mr. BATT. It's viable. Its logistics are enormous. Not many goose colonies are near where people live, so the logistics and expense are enormous. If we—we did some calculations, and something like two million eggs would have to be taken each year to stabilize the population. It would not cause it to decline, and you'd have to do that year after year after year.

Mr. GILCHREST. Given the gravity of the problem, would Canada or the United States consider a joint military exercise to go in there, without ammunition, and gather the eggs? And to see how—to test the endurance. Oftentimes, military people go out on 50-mile hikes, they go out on overnight camp overs, and things like that. You fly them in there and——

Mr. BATT. Well, I don't personally find that unpalatable. I don't know if each government would go along with it. But it would take that scale of an effort. I mean, that scale of an expense to logistically support people in these remote, dangerous places. So it would take something like that.

Mr. GILCHREST. Are there polar bears up there?

Mr. BATT. Yes, plenty. I flew a thousand miles on the coast last August, and we counted 132 on that trip, and that was early in the year, so there's plenty of polar bears.

Dr. GILL. My staff has just asked me to tell you that's a great idea, to mobilize the armed forces on this one.

Mr. GILCHREST. I might re-enlist if that's the case.

[Laughter.]

Mr. BISHOP. Mr. Chairman?

Mr. GILCHREST. Yes?

Mr. BISHOP. Speaking from the Flyway Council's side, and a lot of the stakeholders in the discussions that have been going on for several years on this issue, I think that while there are several things that you've been talking about, by taking eggs and actually maybe reducing some of the geese on the particular colonies where some of those problems are existing, are definite options.

But it is felt, and it was felt by the stakeholders meeting, by most all of the people participating, the utilization of the sporting opportunity that is generally socially acceptable at this point in time needs to be exhausted, and all opportunities at this time need to address these potential possibilities, utilizing our sporting people. Because if this is not done, there will be a major reaction from the sporting world against any action that those of us in the flyway councils, the Fish and Wildlife Service, Canadian Wildlife Service, anybody would take before other options are taken.

Mr. GILCHREST. Understanding the sporting option, and everybody at the table apparently agrees with the sporting option, can we, whoever makes these recommendations, as we pursue aggressively the sporting option, is it also a consideration to pursue the gathering of eggs option at the same time?

Mr. BISHOP. The stakeholders meeting recognized that we should look at both lethal and non-lethal options at the same time. Yes, we have the recommendation that we should explore the—looking into this egg collection as part of a solution.

Mr. GILCHREST. Is there anybody that can say with some assurance—and I'm not against the hunting option, and I think we ought to pursue the hunting option. Can you tell us, with the hunting option, the percentage of reduction of snow geese over a period of time.

Mr. BISHOP. Well, I'd like to speak to that, because back in the early, or the mid-1960's and late 1960's and early 1970's, I was part of flyway program that worked from the Mississippi flyway with the central flyway, and we were trying to build these populations of snow geese.

Mr. GILCHREST. You were trying to build them up?

Mr. BISHOP. Yes. We are partly responsible for this, as well as the agricultural changes in the Gulf Coast States of Texas and Louisiana, and our expansion of feed grains in the upper Midwest. But what we did is we helped build these closed areas and refuge areas for snow geese, primarily to increase their populations, because back in the late 1960's, there was a major concern from Louisiana and Texas that the midwest States were shooting too many geese, and holding them north too long, and the Canadians wanted to increase their harvest, and so we built this population in response to the request from people wanting to utilize this resource. The geese became older, and become very wise in their use of these refuge areas. They do not come down across the continent——

Mr. GILCHREST. Well, I'm just going to—I'm going to interrupt you for just a second, because I have a vote and I have to run. And I understand what you're saying. We go through very similar things on the Eastern Shore with the rise and fall of the population of the Canada goose. We've seen a huge increase, and the difficulties of snow geese over there.

So I think I understand the difficulty of trying to raise the population, then trying to manage the population. I guess what I'm asking is, with an agreement on expanding the hunting season, is there some sense as to the percentage of reduction of this snow goose population over a period of time?

Mr. BISHOP. I was getting to that, and I will address that. Yes, we feel that there is an opportunity. No one has the ability or knowledge though——

Mr. GILCHREST. Can you come close to 50 percent?

Mr. BISHOP. We don't know that we could get to that, but we feel that we can reduce the survival rate of those birds. Back in the years past, we've had serious snow lingering in some of those colonies where we've had major busts of production north of the Manitoba border on some of those areas. So we feel that if we expand the hunting seasons in the spring, and also—and disrupt this concentration of birds in the fall, that we can push those birds back out to the many areas where hunters and sportsmen can get to it, where you're mortality rates will rise on the adult birds, but we're going to have to have an opportunity to see the geese respond to this hunting pressure. We can't give you an exact answer, but we think it will.

Mr. GILCHREST. Thank you. I appreciate that. And we really need to carry this conversation on long beyond the point where we can today, and I look forward to hearing, I hope, from all of you once again before the bill is finally passed. And I hope that we can get together in a cooperative fashion to find some solution, as quickly as possible, to this problem. And thank you very much for traveling here to Washington.

I just have to read a few things into the record. I'll ask unanimous consent—I don't think anyone in the room will object—to put into the record a statement by Don Young, a statement by John Tanner, the statement by the Canadian government, the Ambassador Raymond Chrétien, two statements by the Ambassador, National Wildlife Federation, Mark Van Putten, the HSUS—Humane Society, entered into the record, John—I almost said this was Fred Grandy, but it's John Grandy, John Grandy.

[The prepared statement of Mr. Young follows:]

STATEMENT OF HON. DON YOUNG, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ALASKA

I would like to compliment you for conducting this oversight hearing on the destruction of the Arctic tundra by an ever-increasing population of Lesser snow geese.

Over the last 30 years, the number of Lesser snow geese has dramatically risen from 800,000 birds in 1969 to more than five million today. While they are fully protected under the Migratory Bird Treaty Act, this population explosion is causing serious problems. For instance, the geese's appetite for Arctic coastal tundra has created a strip of desert stretching 2,000 miles along the Hudson Bay in Canada. These geese are literally eating themselves out of house and home and, in the process, destroying thousands of acres of essential nesting habitat. These wetlands are critical to the survival of not only snow geese but hundreds of other migratory birds including brants, black ducks, and mallards.

With the population of Lesser snow geese increasing by about 5 percent each year, unless immediate steps are taken, the fragile, slow-recovering, cold Arctic tundra will continue to be destroyed.

In response to this problem, representatives from the United States and Canada formed the Arctic Goose Habitat Working Group. This group carefully investigated the impact that Lesser snow geese are having on the tundra and issued a report entitled "Aretie Ecosystems in Peril."

While there is no consensus on how to solve this overpopulation problem, suggestions include doing nothing, allowing the collection of goose eggs, or intentionally baiting snow geese to reduce their number.

Clearly, this is a serious problem. It will not be solved in a matter of weeks and it will require a comprehensive management strategy. It is my hope that both our government and Canada will reject the "let nature run its course" option. Allowing the population to simply crash is a misguided approach that will have dire consequences for snow geese, other tundra inhabitants, and the coastal environment. As we wait for the crash to occur, thousands of additional acres of the Arctic tundra will be irreplaceably destroyed for generations. In addition, the U.S. Fish and Wildlife Service should not try to duplicate the disaster they created in Cape Cod, Massachusetts. It was a mistake to poison thousands of gulls, and this option should not be given any serious consideration.

Finally, I look forward to hearing from our distinguished witnesses and I want to compliment our colleagues, Duncan Hunter and Duke Cunningham, for their leadership in proposing House Concurrent Resolution 175. This problem does cry out for a comprehensive management strategy to save the Arctic tundra from the ravaging appetites of Lesser snow geese.

[The prepared statement of Mr. Tanner follows:]

STATEMENT OF HON. JOHN S. TANNER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TENNESSEE

Chairman Saxton, Representative Abercrombie, Members of the Subcommittee on Fisheries Conservation, Wildlife and Oceans, I want to first thank you for your continued leadership in the conservation of our fish and wildlife resources. It is that leadership that brings us here today to examine the plight of the Mid-Continent Lesser Snow Goose and the work of the Arctic Goose Habitat Working Group.

I look forward to hearing from my House colleagues; Paul Schmidt, chief of the U.S. Fish and Wildlife Service's Office of Migratory Bird Management; Ron McIntosh, counselor for environment and fisheries at the Canadian Embassy; Dr. Bruce Batt, Ducks Unlimited's chief biologist; Roger Holmes, director of the Minnesota Division of Fish and Wildlife and chairman of the IAFWA's Migratory Wildlife Committee; Rollin Sparrowe of the Wildlife Management Institute; and Dan Beard of the National Audubon Society.

The Problem

Let's face it, the problem is staggering. Over the past 30 years the population of Mid-Continent Lesser Snow Geese has exploded by more than 300 percent. Roughly 900,000 Mid-Continent Lesser Snow Geese were recorded in surveys taken in 1969. Today, many of the more than four million Mid-Continent Lesser Snow Geese are struggling to survive in the same arctic and sub-arctic breeding habitats that sustained only 900,000 snow geese 30 years ago. Many biologists believe those breeding habitats are capable of sustaining fewer than two million snow geese today. The population of these snow geese is growing at an annual rate of 5 percent to 8 percent. Indeed, in 1968 when scientists began studying snow geese in the breeding grounds around La Perouse Bay there were 2,000 breeding pairs. Last year scientists found more than 40,000 pairs. Nesting colonies at Cape Henrietta Maria have exploded from roughly 2,000 pairs in 1960 to 225,000 pairs last year that had hatched more than one million goslings. That means trouble in the states where these birds winter. State waterfowl managers in Arkansas, Mississippi, Louisiana, Texas, and Oklahoma are facing more severe problems in the southern regions of the Mississippi and Central Flyways where snow goose numbers have more than doubled in the last five years alone.

Equally stunning, of the 1,200 mile coastline of Hudson Bay and the Southern James Bay, more than 30 percent of the original habitat is considered destroyed, another 30 percent is severely imperiled and the remainder is overgrazed. These geese have eaten themselves into crisis.

As Duck Unlimited's chief biologist Dr. Bruce Batt wrote earlier this year, "When we first surveyed Cape Henrietta Maria by helicopter, we were surprised to see only a handful of family groups of snow geese, knowing that more than 225,000 breeding pairs had hatched more than one million goslings there just eight weeks ago. The reason for the birds absence, however, was soon readily apparent from the air.

"Vast expanses of tundra in and around the nesting colony resembled a moonscape after years of intensive feeding by hordes of geese. The hungry birds had denuded most of the vegetation from the landscape, forcing adult birds and their hatchlings to wander down the coastline in search of food."

Mid-Continent Lesser Snow Geese breed in the arctic and sub-arctic regions of Canada primarily the western coasts of the Hudson Bay and the southern James Bay as well as the Baffin and South Hampton Islands. Beginning in August these snow geese begin their migration south over the Canadian boreal forests and along the Central Flyway corridor and the Mississippi Flyway corridor to their wintering grounds in Mississippi, Arkansas, Louisiana, Texas, and Oklahoma.

Many waterfowl managers believe the virtually unlimited food source provided by many farmers in the Mississippi and Central Flyway states is part of the reason for the sustained growth rates these geese are experiencing. The available breeding habitats can no longer sustain the present population and that raises a number of threats to both these snow geese and other migratory birds that include the spread of avian cholera and increasing salinity levels in the soil because of the removal of virtually all of the tundra's protective turf by an over-abundance of snow geese.

The Arctic Goose Habitat Working Group

The Arctic Goose Joint Venture, which is one of the Joint Ventures formed to implement the goals of the North American Waterfowl Management Plan, put together the Arctic Goose Habitat Working Group in 1996 to address booming snow goose populations and the resulting degradation of prime breeding ground habitat.

Last year, the Working Group produced a series of recommendations that will hopefully take a significant step towards solving the pressing habitat issues facing Canada and the United States.

- Remove existing hunting restrictions on techniques including the use of electronic calls, baiting, and the practice of creeping.
- Permit snow goose hunting beyond the March 10 closing date.
- Encourage native hunters to increase subsistence harvests of eggs and adult birds.
- Expand hunting opportunities on some National Wildlife Refuges in an effort to help disperse the geese from typically protected areas.
- Work with waterfowlers and land owners to improve access to private lands.
- Encourage state wildlife agencies to develop reciprocal agreements among the states to exempt nonresident waterfowlers from purchasing multiple licenses to hunt snow geese.
- And finally, remove or greatly expand current bag and possession limits.

The recommendation to reduce the lesser snow goose population by half has been endorsed by the U.S. Fish and Wildlife Service, its Canadian counterpart, the state fish and wildlife agencies, Ducks Unlimited, the Ornithological Council, the Wildlife Management Institute, the Arctic Geese Stakeholders Committee, the National Wildlife Federation, and the National Audubon Society. Consideration of the Working Group's recommendations is advocated by many of these same organizations. Many believe those recommendations represent a good first step, but we need to begin planning for the possibility these recommendations alone may not be enough. American and Canadian hunters harvest an average of roughly 400,000 snow geese each year proof enough that these crafty birds are difficult to hunt.

The Future

Like many who have been working on this issue for much longer than me, I don't believe the solution to this problem now or in the future will be a simple one. But I do believe we need to take several steps to prepare for the long-term management of the Mid-Continent Lesser Snow Goose population at sustainable levels in an effort to restore these critical habitats.

First, the U.S. Fish and Wildlife Service should begin, if it hasn't already, to identify what future steps or options should be formulated for consideration in the event the Working Group's recommendations do not achieve the needed goals to sustain both the snow geese and the available habitat. This process needs to be an adaptive process that leaves Federal, provincial, and state waterfowl managers, working in concert with those in the conservation community, the flexibility to manage this problem and adapt to changes in the nature of the goose population and its habitats as required.

The Joint Flyway Council has recommended a $10 million increase to allow the Service to better address with its partners goose population monitoring, management and research needs. This recommendation is supported by the International Association of Fish and Wildlife Agencies. I believe the Joint Flyway Council's recommendation is the direction we need to be moving if we are ultimately going to solve this problem and begin restoring critical parts of this imperiled arctic ecosystem. The bottom line is that we need to take the advice, experience, and recommendations of state, Federal, and provincial waterfowl management experts not-to-mention those in private conservation organizations **and** work within the constraints of a balanced Federal budget to give these professionals the resources and tools they need to adequately meet the challenges facing lesser snow geese on the breeding grounds of the arctic tundra.

The Cost Of Doing Nothing

The cost of doing too little or nothing at all will be excruciating if not irresponsible. The Mid-Continent Lesser Snow Geese have now become the most serious threat to their own existence in the view of many. Their destruction of these prime habitats are threatening the existence of many other species of migratory birds including shorebirds and songbirds. Specifically, puddle ducks like the American wigeon and shovelers no longer use the freshwater wetlands in and around the colony, according to experts like Dr. Batt. They are finding that many non-game migratory birds like the stilt sandpiper in the arctic and subarctic habitats are declining in numbers because of the extreme habitat degradation brought about by the abundance of these snow geese.

Again, Dr. Batt recently wrote, "One persistent argument to managing snow geese populations via harvest is that nature should be allowed to take care of the problem. That will happen, of course, if managers don't intervene. Choosing that path, however, will result in the destruction of remaining gosling feeding areas.

"Unfortunately, the adult geese will not stop laying eggs each spring because of a lack of habitat. The birds will continue to return from the southern agricultural areas fat, healthy, and ready to nest, and the birds are capable of storing enough nutrients to successfully hatch their broods with little supplemental feeding. As a result, the unhappy saga of starving goslings will be repeated year after year.''

The problems facing these snow geese and the degradation of their breeding ground and wintering habitats require vigilance on the part of our waterfowl and migratory bird managers as well as those partners in the Arctic Goose Joint Venture, participants in the Working Group, and those in the private sector.

Doing nothing is neither a scientifically viable, nor acceptably responsible solution.

Again, thank you Mr. Chairman, Representative Abercrombie, Members of the Subcommittee, and those who have been working on this problem through the Working Group for working together to achieve the kind of consensus that will allow us to effectively solve the problem in a way that benefits both the snow goose and its habitat.

[The prepared statement of Ambassador Chrétien may be found at end of hearing.]

[The prepared statement of Mr. Van Putten may be found at end of hearing.]

[The prepared statement of Mr. Grandy may be found at end of hearing.]

Mr. GILCHREST. And there was one other little item that I forgot to do here, and if I can't find it, I guess the world won't come to an end. Well, I ask unanimous consent that any member on this Committee has five legislative days to submit in writing something to put into the record for the Committee.

Thank you gentlemen very much. The hearing's adjourned.

[Whereupon, at 3:35 p.m., the subcommittee adjourned subject to the call of the Chair.]

[Additional material submitted for the record follows.]

STATEMENT OF PAUL R. SCHMIDT, CHIEF OF THE OFFICE OF MIGRATORY BIRD MANAGEMENT, U.S. FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR

Good afternoon, Mr. Chairman and members of the Subcommittee. I am Paul Schmidt, Chief of the of Office of Migratory Bird Management, United States Fish and Wildlife Service. Thank you for the opportunity to appear today to discuss the Service's position regarding the ecological problems associated with Mid-continent lesser snow geese.

Background:

North American geese are a natural resource of enormous economic and social value to both hunters and birdwatchers throughout the United States. Migratory bird hunting, including goose hunting, generates about $4 billion of economic activity, and millions of people further enhance local and regional economies as they view geese throughout the year. Management of this diverse and widely distributed resource is becoming increasingly complex. The management challenges include dealing with both overabundant goose populations that are destroying fragile arctic ecosystems or causing significant economic losses on agricultural lands; and dealing with some goose populations that are declining. These declines have occasionally resulted in the closure of hunting seasons, and in some cases increased the likelihood of their listing under the Endangered Species Act. The overabundance of Mid-continent lesser snow geese is one of the more critical challenges we face.

Mid-continent lesser snow geese *(Anser caerulescens caerulescens)*, hereinafter referred to as snow geese, breed in the subarctic and arctic regions of Canada, primarily along the south and west coasts of Hudson Bay and the southern portions of Southampton and Baffin islands. Snow geese migrate southward in the fall through the Central and Mississippi Flyways. Historically, snow geese wintered primarily in the coastal areas of Texas and Louisiana; however, today their winter range spans across Texas, Louisiana, Oklahoma, Arkansas, and the central highlands of Mexico.

The snow goose population has grown more than 300 percent over the last 30 years, from 900,000 birds in 1969 to between 4.5–6 million birds today. The rapid growth of the population has been primarily attributed to the expansion of agriculture along the Central and Mississippi Flyways, low mortality, and increased winter survival. During the 1950s, industrial, agricultural, and urban expansion along the Gulf Coast contributed to a wide-spread decline in salt marsh-habitat and, at that time, snow goose numbers were constrained in part by limited suitable winter habitat and low overt survival. In spite of the establishment of refuges and other sanctuaries along the Gulf Coast to protect such habitats, snow geese expanded their feeding range during the winter into the adjacent rice prairies, where high energy food resources were abundant. As a result, the snow goose population grew with the expansion of the rice industry. Further north, snow geese were quick to utilize the increasing acreages of high energy cereal grain crops throughout the Midwest, assuring that the birds always arrived on their breeding grounds in prime condition to breed.

Today, there are approximately 2.25 million acres of rice fields in Texas, Louisiana, and Arkansas, in addition to the millions of acres of cereal grain crops in the Midwest. Consequently, food availability and other habitat requirements are not limiting snow geese during the migration and wintering portions of the annual cycle. Conversely, suitable breeding habitat in the arctic tundra is diminishing due to the effects of escalating snow goose numbers and will continue to decline if the population is not soon reduced. The Service believes that the snow goose population has already exceeded the carrying capacity of its breeding habitat and that the population must be reduced to avoid long-term consequences to an ecosystem important to many other wildlife species, in addition to snow geese.

In 1996, the Arctic Goose Habitat Working Group of the Arctic Goose Joint Venture documented the ecological problems associated with overabundant goose populations in the publication *Arctic Ecosystems Peril: Report of the Arctic Goose Habitat Working Group*. The report emphasizes the need for action and encourages Canadian and United States wildlife agencies to take immediate steps to reduce the snow goose population by 50 percent by 2005.

Report findings illustrate the severe degradation of coastal salt marsh habitat along west Hudson Bay by large concentrations of feeding, migrating, molting, and staging geese. In addition to the approximate one million snow geese that nest in the Hudson Bay Lowlands, 3–3.5 million geese from colonies north of Hudson Bay stage along the Lowlands during migration. Consequently, salt marsh habitats within this region have been damaged to the point that desertification, soil salinization, and the depletion of vegetative communities are obvious throughout the region. Preliminary results of recent research investigations in the La Perouse Bay area indicate that numbers of more than 30 avian species have declined, presumably due to loss of suitable habitat to foraging snow geese. The loss of vegetation and decline of many bird populations represents an overall decline in the biological diversity of the Hudson Bay Lowlands salt marsh ecosystem.

Currently, 47,000 acres of the 135,000 acres of habitat in the Hudson Bay Lowlands are considered destroyed, 41,000 are damaged, and 47,000 are heavily grazed. Other arctic habitats may be suffering the same fate as existing snow goose colonies expand and new colonies are established. Ongoing research has identified new and expanding colonies and has indicated that habitat degradation is occurring in those areas also. However, these research efforts are still in early stages, and habitat degradation in other areas has yet to be documented to the extent that it has been in the Hudson Bay Lowlands. The Service intends to do what we can to halt further habitat degradation in new and existing areas and restore biological diversity to the Hudson Bay Lowlands.

Report findings further indicate the expansion of existing colonies and the establishment of new colonies in areas north of the Hudson Bay Lowlands. Many of the new colony areas are experiencing rapid habitat deterioration from large concentrations of snow geese, similar to the deterioration observed on the Hudson Bay Lowlands.

The report substantiates the need to reduce the population to a size that the arctic habitat can sustain. Adult survival has been the key factor influencing the growth of the population and therefore, adults must be removed from the population if the population is to be significantly reduced.

Service Position:

The Service concurs with the results of the report and agrees with the recommendations to reduce the population. The Service believes the recommendations associated with population control by hunters should be considered before using more direct control measures, such as trapping and culling, commercial harvest, and other methods. These more direct control measures may be necessary, but should be considered only after alternative strategies within the migratory bird regulations do not succeed in significantly reducing the population within 3-5 years. Although likely more effective, the more direct control measures are highly controversial and costly. However, should the initial strategies within the migratory bird regulations not be successful, we feel that public acceptance for the more direct control measures would be obtainable.

The first phase of management for this expanding snow goose population actually began several years ago when the Service increased the bag limit to 10 birds and expanded the snow goose season to 107 days, the maximum allowed under the Migratory Bird Treaty Act of 1918 (Act). Despite an increase in overall harvest, the rate of harvest has declined, indicating the population is still growing and that these strategies alone are not working. It is clear that adjusting regulatory management strategies within the current Act requirements are not enough to stabilize or reduce the population and the Service must consider new alternatives to increase the rate of harvest.

Although harvest has not increased sufficiently to reduce the population's growth rate, the Service believes that this management tool still has the potential to be effective. Therefore, the Service will be implementing this population control measure with the intent to significantly increase take of snow geese outside of the season frameworks prescribed by the Treaty.

The Service believes that aggressive management intervention is a necessary, professional and credible alternative. The problem of overabundant snow geese is the result of human activities and our changing agricultural and other land management practices. It is a Service responsibility to manage the migratory bird resource and to maintain both healthy sustainable populations and their associated habitats. Without management intervention, we would likely witness the destruction of an ecosystem that is important to other migratory birds and wildlife species. Research has already demonstrated a decline in local avian populations in badly degraded areas. It is also possible that the snow goose population would crash and remain at extremely low levels due to lack of suitable breeding habitat, the spread of disease, and predation. Massive disease outbreaks, in particular, could have devastating effects, not only on snow geese, but on other avian species as well. Large numbers of birds that migrate and stage with snow geese, including species of management concern such as whooping cranes, bald eagles, northern pintails, and many others, could suffer significant losses. The Service believes that responsible management action must be taken soon to avoid such catastrophic events.

In the last year, considerable consultation within and among United States and Canadian wildlife agencies has occurred regarding overabundant snow geese, including numerous discussions with Federal, State, private, academic, and non-governmental experts and staff. Snow goose management workshops were conducted in the fall of 1997 along the Central and Mississippi Flyways by the Service to examine the potential role of public lands and public land managers in resolving this issue. As a result, Regional Action Plans were developed in cooperation with the States and will be implemented over the next three years to help reduce snow goose numbers. These plans will focus on 5 points: (1) providing increased hunter opportunity on public and private lands, where feasible; (2) decreasing food availability for snow geese; (3) manipulating wetland areas to deter snow geese; (4) altering winter habitat; and (5) conducting communication and outreach efforts.

An international Arctic Geese Stakeholder's Committee met over the winter to discuss the role of non-governmental organizations in the snow goose issue and provided the Service and the Canadian Wildlife Service with recommendations for acceptable management strategies. The Committee represented United States and Canadian non-governmental conservation groups. It recognized and supported the need for immediate actions and identified lethal and non-lethal methods that would be acceptable to reduce the snow goose population and preserve arctic biological diversity. Most importantly, the Committee recognized and supported the need for immediate action.

United States and Canadian media have given significant attention to the snow goose issue over the last year. Articles have appeared in the Washington Post, New York Times, and many other local and regional Canadian and United States papers. Local and national TV news programs have also aired pieces on snow geese, including National Public Radio and CBS News. The Service believes that the media attention and our work with the Stakeholder's group has created an environment where the need for responsible management action is recognized both within the conservation community and the general public.

The Canadian Wildlife Service has also taken this issue very seriously and has paralleled efforts in the United States to educate and involve the public and the wildlife management profession. They will be implementing control strategies similar to our own including the use of electronic callers and Sunday hunting during the spring migration.

On April 6th of this year, the Service published a Notice of Intent announcing plans to prepare an Environmental Assessment that will review migratory bird regulations with the intent of reducing the Mid-continent lesser snowgoose population. In this EA, we will be considering strategies to implement a population control measure to increase the take of snow geese outside of the normal season. Strategies may include the use of electronic callers, unplugged shot guns, baiting, live decoys, rallying without the use of a motorized vehicle, and others. The Service will have a draft EA and a proposed rule available for public review and comment this summer with a goal of a final rule published in the Federal Register by January 1999.

If final regulations are approved in early 1999, this population control measure would be in place for the spring before the geese return to the arctic. Should the initial phases of the management strategy be unsuccessful in significantly reducing the snow goose population within 3-5 years, the Service will seriously consider more radical management alternatives to reduce the Mid-continent lesser snow goose population.

In closing, I want to reiterate the many and increasing challenges we face in management of the more than 20 populations of geese in North America. Other goose populations are increasing at rapid rates as well, including "resident" Canada geese throughout many parts of the United States and greater snow geese in the Atlantic Flyway. On the other hand, a number of populations, such as dusky Canada geese in the Pacific Flyway, the Atlantic population of Canada geese, the Southern James Bay population of Canada geese in the Mississippi Flyway, and the threatened Aleutian Canada geese, require careful management to protect and/or restore these populations. The Service is committed to working with the State fish and wildlife agencies, Canadian wildlife authorities, and public stakeholders to address the critical issue of the overabundance of snow geese as well as these other challenges we face.

Thank you for the opportunity to be here today and your support for our efforts to deal with these important wildlife resource management issues. I would be pleased to answer any questions you may have regarding snow geese and the Service's response to this issue.

STATEMENT OF BRUCE D. J. BATT, CHIEF BIOLOGIST OF DUCKS UNLIMITED, INC., MEMPHIS, TENNESSEE

Good afternoon Mr. Chairman and members of the Subcommittee. My name is Bruce Batt. I am the Chief Biologist of Ducks Unlimited, Inc., headquartered in Memphis, Tennessee. For the past two years I have served as the Chairman of the Arctic Goose Habitat Working Group which was formed by the Arctic Goose Joint Venture Management Board to examine the issue of over-abundant Mid-continent Lesser Snow Geese. Ducks Unlimited has made my time available to this exercise because we have come to believe that the unprecedented large numbers of these geese are causing widespread and irreversible damage to the arctic ecosystems that support the birds during the breeding season in Canada Ducks Unlimited is the largest non-government waterfowl and wetlands conservation organization in the world and this issue warrants our most serious attention.

The Working Group consisted of 17 scientists, waterfowl managers and academics who came together to examine the published and unpublished information that was available on the status of the snow goose and the ecological consequences of their rapidly expanding population. We concluded that their numbers were at such a high level that something should be done to lower the population. Subsequently, we were asked to recommend to what level it should be reduced and to suggest methods that might be used to bring the numbers down. We completed our report entitled, *Arctic Ecosystems Peril,* in October of 1996 and published it for general release in February 1997.

The title of the report was coined *after* we had completed our work and come to realize just how disastrous the extraordinary abundance of snow geese was to the Canadian arctic breeding grounds around Hudson Bay, on the arctic islands of Southampton and Baton and in the Queen Maud Gulf area.

The official index of the population, based on counts made mid-winter when they gather in huge concentrations in the states of Louisiana, Texas, Arkansas, Mississippi and Tennessee, has increased from less than 900,000 in 1970 to about 3 million today. That change reflects an average annual population growth rate of about 5 percent which is very high, especially to be sustained for such a long period of time. However, independent surveys of individual colonies during the breeding season indicate that there are more likely over 4.5 million birds in this population, making it the most abundant arctic goose in the world.

We concluded that the extraordinary population growth is being driven by several human-caused factors. The most significant is the tremendous expansion of agriculture throughout the mid-continent Great Plains region of the continent. The geese spend about 8 months of the year in this region which extends from the Canadian prairies to the Gulf Coast of Texas and Louisiana. The abundant agricultural foods exploited by the geese on the Great Plains assure that, year in and year out, more birds survive through the wintering period to go back north in excellent physical condition to breed than was likely ever the case in pre-settlement days.

Historically, the geese wintered along the gulf coast and fed in natural marshes that had limited food supplies. Some degradation of the coastal marshes combined with the enormous expansion of agriculture forced, or allowed, the geese to exploit a new, and effectively unlimited, food source. For perspective, 25 million acres of Mississippi River bottomland hardwood forest, which was not goose habitat in these states, was cleared after the second world war and converted to soy bean and rice fields which the geese now exploit readily.

The second key factor was the establishment of many private, state and Federal wildlife refuges, which were designed to protect migrant and resident wildlife. These well-intended efforts are at the heart of many of today's wildlife conservation practices. Indeed, myriad species depend on refuges to provide many of their life's requisites and wildlife refuges provide enormous educational and esthetic benefits to our society. But snow geese have an uncanny ability to recognize and exploit refuges, and they have done so with gusto. Many refuges provide safety for 100s of thousands of snow geese where their most significant predator in modern times, the hunter, is excluded.

A third factor, related to the birds' use of refuges, is their unequaled ability to recognize a hunting situation and successfully avoid it. And because they congregate in such large numbers, the whole mass of geese more often than not, will follow the leader to safety where there are no hunters. After more than a decade of modifying hunting regulations to increase harvest of snow geese, managers have concluded that, with the traditional hunting methods and time frames, hunters have not been able to arrest the persistent growth of the population.

The last factor, is a moderate change in the climate that has resulted in generally warmer temperatures and a longer ice-free season in the summer when the birds breed. This results in fewer unsuccessful breeding seasons that previously helped to check population growth.

The consequences of this out-of-control population is that more birds are returning each spring to breed than can be supported by the finite and fragile breeding habitats upon which the birds depend. Their massive numbers put such a high demand on the limited food supplies that vast tracts of the arctic have been converted to highly saline, bare soil where few plants can grow, virtually none of which are used by the geese. This is a similar ecological process to what is occurring on vast tracts of the African Continent where soil degradation is resulting in the expansion of the deserts and the permanent loss of once arable soil. On the most well-studied habitat, along the 1100 mile Hudson and James Bay coastline, 35 percent of the salt marsh has been destroyed, 30 percent is heavily damaged and the remainder is just heavily grazed. Each year, more habitats are moving up into the destroyed category. The destroyed marsh will take many decades to recover, at least most of the next century, and scientists are uncertain that some tracts can ever recover.

The destroyed habitat does not provide adequate food for the goslings. As a result many tens of thousands die from starvation and disease each year. Some survive however, especially those that are raised at the edge of the colonies where some food remains or wherefrom the birds can disperse to areas not yet destroyed. Dispersal still allows enough goslings to survive to allow population growth. More northern areas do not appear to be damaged as much yet and population growth, on the larger scale, is probably fueled primarily by increases from those areas.

Our Working Group concluded that the wide-scale damage on the southern colonies provides an unambiguous warning of what will happen to all the remaining habitat if the population is not brought to a level that can be sustained by the habitat for the long-term. The forecasts of what will happen if we don't act to reduce numbers take a couple of different views, neither one of which is very palatable. One view predicts that the numbers will grow until all the vestiges of goose habitat are destroyed. This would be accompanied by a population crash over a decade or so while few young would be produced and as the surviving adults left the population because of natural mortality. After the crash, the population would be very low for a very long period of time because the habitat base needed to support population recovery would have been destroyed.

The alternate unhappy scenario predicts that even when essentially all the habitat was destroyed, enough young would survive from year-to-year that some level above a crash could be sustained. Under either scenario, 100s of millions of goslings would starve to death in the slum-like conditions of the once pristine and wild arctic region.

But this is a bigger story than just the effects on the geese. This is an "Ecosystem in Peril." All the other wildlife and plants that live in this ecosystem will also be decimated as it is destroyed. Most species would have other places in which they could survive but some are low in number and themselves, face threats to their survival because of impacts we have had on other habitats in which they live. The migratory birds are the most spectacular and most abundant. All of them migrate through Canada and the United States between breeding and wintering areas. Many winter in Central and South America and are truly important treasures in the rich bird fauna shared by all the Americas.

As a result of these perspectives, the Working Group recommended that this unnatural phenomenon be arrested by strong goose population reduction measures to bring the numbers to a level that can be sustained by their arctic ecosystem. We projected that this would mean reducing the numbers by half and we urged that this reduction would take place by the year 2005. It is not possible to be certain that a 50 percent reduction is needed or, if it is enough, as this problem has never been encountered before. Thus, we recommended that any population reduction program should be accompanied by an extensive monitoring system to measure the changes in the ecosystem so that the point at which a sustainable number was achieved would be recognized and the control measures would be stabilized.

Our recommendations focussed on reducing the numbers of birds harvested by hunters in the more settled areas of the continent and in the Canadian north by aboriginal hunters. These groups have always responded to wildlife management crises in the past and will hopefully be able to play a major role in solving this problem. They work for nothing, are trained, equipped, experienced and motivated. Other more "drastic" measures such as culling and market hunting are included in a second tier of steps that could be taken, but besides their obvious unpalatability, they would be enormously costly to the public purse and subject to all sorts of legal and ethical challenges. We clearly do not want to have to resort to the second tier of management measures.

The *Arctic Ecosystems in Peril* report has been made available to the scientific community for their review for over a year now. It was a prominent topic at the largest ever gathering of the world's goose biologists last January in Victoria, Canada. It has survived this scientific scrutiny with the only debate focussing on just how many geese will have to be removed from the population to establish a sustainable level. There is little disagreement in the scientific community about the causes of the problem or the consequences of continued population growth on the ecosystem, on the geese themselves or on the other species that will suffer collateral damage.

The snow goose "crisis" has been the subject of hundreds of newspaper, magazine, radio and television pieces. These have stirred virtually no negative responses from the public as to the importance of reducing numbers to a more sustainable level. Communications have been thorough, balanced, and accurate and the message is scientifically defendable. In short, the scientific community and the public are well informed and well prepared to address this issue with a strong and asserted effort.

Other goose populations are growing and threatening to manifest these same problems, not only in other areas in North America, but also in Europe, in Australia and in New Zealand. Each case can be traced to the same cause-and-effect relationship with agricultural expansion and the "escape" of the birds from traditional management practices. It is crucial to get on with managing this problem, not only because of the impacts of the snow goose on the places where it lives, but also because crucial lessons must be learned to help us as we face emerging problems with other geese in the future.

As we have worked so diligently to change the face of North America to support our agricultural, urban and rural enterprises, wildlife has responded in a variety of ways. Many species have been reduced in number and distribution and we have come to grips with serious issues like endangered, threatened and extinct species. The on-going commitment to those needs will assure many successes in the future. However, over abundant species are at the other end of the continuum of how species respond to the new landscapes that we have crafted to satisfy our modern needs and wants. They demand an equally effective commitment to their management.

STATEMENT OF ROGER HOLMES, DIRECTOR, MINNESOTA DIVISION OF FISH AND WILDLIFE AND CHAIR, MIGRATORY WILDLIFE COMMITTEE, INTERNATIONAL ASSOCIATION OF FISH & WILDLIFE AGENCIES

Thank you, Mr. Chairman, for the opportunity to share with you the perspectives of the International Association of Fish and Wildlife Agencies on the increase of the mid-continent lesser snow goose (snow goose) population and the impact they are having on the Arctic tundra habitat. I am Roger Holmes, Director of the Minnesota Division of Fish and Wildlife, a position I have held for 8 years. Before serving as director, I was chief of the Minnesota Department of Natural Resources, Wildlife Division for 18 years. Prior to that I was a wildlife manager and wetland habitat biologist with the Minnesota Department of Natural Resources.

I was also the state of Minnesota's representative to the Mississippi Flyway Council for 22 years, served on the North American Waterfowl Management Plan Committee for 6 years and currently chair the Association's Migratory Wildlife Committee and have done so for 8 years.

Mr. Richard Bishop, Bureau of Wildlife Chief for the Iowa Department of Natural Resources and a member of the snow goose technical team, who has also dealt with this issue over a number of years, is with me to help answer questions.

The Association, founded in 1902, is a quasi-governmental organization of public agencies charged with the protection and management of North America's fish and wildlife resources. The Association's governmental members include the fish and wildlife agencies of the states, provinces, and Federal governments of the United States, Canada and Mexico. All 50 states are members. The Association has been a key organization in promoting sound resource management and strengthening Federal, state, and private cooperation in protecting and managing fish and wildlife and their habitats in the public interest.

The Association and member agencies are very familiar with the necessity for action to address the over population of snow geese that is causing substantial adverse impact on the Arctic tundra. We would like to summarize background information and the Association's recommendations to address this problem.

The Association is concerned that snow goose populations are expanding at an average rate of 5 percent a year. With this level of increase, nesting colonies are being impacted and damage to fragile Arctic tundra habitat is expanding annually. We applaud you and the Subcommittee for holding this hearing and urge you to support actions to help solve this problem.

Mid-continent lesser snow goose populations, which are an international resource, now exceed 4 million breeding birds. This is an increase since the mid-1970's of more than 300 percent. This over abundance of snow geese is attributed mainly to changing agricultural practices on the wintering grounds in the coastal areas along the Gulf of Mexico, and throughout the Central and Mississippi Flyway migration corridors. These practices increased the food available during migration and wintering periods. Also the extensive network of state, provincial, Federal and private wildlife refuges provide sanctuaries for snow geese and other migratory waterfowl.

Scientists and wildlife managers agree that mid-continent lesser snow geese, which nest in the central and eastern and sub-Arctic regions of Canada, have become so numerous that fragile tundra habitats along the Hudson and James Bay lowlands have been severely degraded or destroyed. This is a serious ecological problem affecting all the diverse species of flora and fauna found there, thus decreasing biodiversity. There are indications that other bird species, such as shorebirds and waterfowl, which nest in the areas where severe damage has occurred, are in decline because their breeding habitat is being destroyed. As snow goose populations continue to increase and brood rearing habitat declines, they are dispersing to adjacent areas and the zone of damaged habitat is widening. Population levels are now well above the sustainable levels for the Arctic and sub-Arctic habitats upon which they depend. In addition, as carriers of avian cholera, snow geese are a potential health threat to all other bird species that share their nesting or wintering habitats. Furthermore, reports of damage to agricultural crops in the states and provinces that lie between those areas are increasing.

The status and implications of increasing mid-continent lesser snow goose populations have been addressed by an international group formed by the Arctic Goose Joint Venture (AGJV), which itself is an international joint venture under the North American Waterfowl Management Plan.

As you know, the Arctic Goose Habitat Working Group submitted its comprehensive report in 1997 entitled *Arctic Ecosystems in Peril.* The Report documented the ecological problems of the salt marsh habitats found in the Hudson Bay Lowlands, such as desertification, soil salinization and the depletion of vegetation communities. The IAFWA agrees with the findings of that report, which encourages U.S. and Canadian wildlife agencies to take immediate action. More recently, a group of stakeholders from Canada and the United States met to consider solutions to the over population problem. The *Report of the Stakeholder's Committee on Arctic Nesting Geese* (dated March 11, 1998) was accepted and endorsed by the IAFWA Waterfowl subcommittee and Migratory Wildlife Committee at their meetings in March, 1998. We understand that the Committee has a copy of that report.

It must be recognized that the over-abundance of snow geese is a man made problem. It also must be recognized that the snow goose population has become a threat to itself and without immediate action, ecological damage in affected habitats could be catastrophic and some scientists believe this damage could be permanent. Habitat recovery in areas that are not yet permanently damaged will take decades or even centuries to recover. To let nature take its course for snow geese is not acceptable. If the adult snow goose population is not reduced to sustainable levels in the near future, in addition to the habitat degradation, millions of snow geese will die from starvation and disease. Should the population "crash" in this manner, it is likely that snow geese would not recover because of long term or even permanent loss of habitat to support the rebuilding of populations. Effective management measures must be directed towards reducing adult survival. The mid-continent lesser snow goose population must be reduced by approximately 50 percent of its current size. To do this, we are recommending that snow goose numbers be reduced by 5 percent to 15 percent annually using the strategies noted below. Multifaceted and multiagency approaches are required. There is almost no risk of the recommended management policies causing over-harvest of mid-continent lesser snow geese within the next several years.

As noted earlier, the IAFWA agrees with the Stakeholders Report. The following are taken from the guiding principles and recommendations sections of that report:

Guiding Principles

1. Lethal and non-lethal actions should be pursued simultaneously.
2. Adaptive management strategies involving enhanced evaluation and monitoring of the ecosystem and populations of snow geese and other species, as recommended in *Arctic Ecosystems in Peril,* must be a component of a lesser snow goose population reduction program.

3. Necessary resources must be provided by the agencies to carry out implementation, enforcement, evaluation, and monitoring of snow goose reduction programs and long term population management.

4. Snow geese must be treated with respect as a valuable component of the natural ecosystem. Geese that are killed for management reasons must be killed as humanely as possible and utilized as food wherever feasible.

5. Recommendations regarding harvest regulations apply to a white goose only season when all other waterfowl seasons are closed.

6. Ecosystem restoration and sustainability should be the long-term objective, with an intent to benefit all species of plants and animals.

Recommendations

1. United States and Canadian governments should permit a Conservation Harvest of white geese between March 11 and August 31, where and when appropriate.

2. Subsistence harvest, including egging, should be encouraged in Canada where appropriate.

3. The survival and productivity of lesser snow geese should be reduced through the appropriate management of public lands, including State, Federal, and Provincial refuges, and, where appropriate, private land.

4. The U.S. Fish and Wildlife Service and Canadian Wildlife Service should consider allowing the use of electronic callers.

5. The U.S. Fish and Wildlife Service and Canadian Wildlife Service should consider increasing bag and possession limits.

6. Federal, State, and Provincial agencies are encouraged to develop mechanisms to facilitate snow goose hunting.

7. State and Provincial agencies should consider innovative methods such as reciprocal licensing to encourage non-resident hunters.

8. Agencies should develop and implement comprehensive education and outreach programs for the public and address both positive and negative impacts that habitat management actions have on migratory bird populations, specifically regarding agricultural practices and private lands management.

9. Agencies should review the effectiveness of hazing as a management tool on a site specific basis.

10. Agencies should review the effectiveness of nest destruction on a site specific basis.

We are aware that the U.S. Fish and Wildlife Service published a notice of intent on April 6, 1998 indicating that it would prepare an Environmental Assessment that would review the migratory bird regulations with the intent to significantly reduce snow goose numbers. We support the notice of intent and the preparation of the environmental assessment dealing with this issue.

It must be recognized that there is a distinct lack of funding for goose management programs. The need for better biological data through monitoring programs, habitat management, and other forms of population management is increasing while Federal budgetary resources are decreasing. The Joint Flyway Councils have recommended a budget increase of approximately $10 million to adequately address goose population monitoring, management and research needs.

In conclusion, Mr. Chairman, the Association firmly supports the recommendations contained in the Arctic Geese Stakeholders Report and we would urge the Subcommittee to support increased funding to ensure that the problem of over-abundance of mid-continent lesser snow geese is addressed.

Thank you for the opportunity to share the Association's perspectives. Mr. Bishop and I would be happy to address any questions you might have.

STATEMENT OF DR. FRANK GILL, NATIONAL AUDUBON SOCIETY

Chairman Saxton, I appreciate this opportunity to appear before the Subcommittee today to testify on the detrimental impact of Snow Geese on Arctic resources.

My name is Dr. Frank Gill, Senior Vice President and Director of Science of the National Audubon Society. I am also President of the American Ornithologists' Union, the country's foremost society of professional ornithologists. With me is Ms. Genevieve Thompson, Executive Director of Audubon's North Dakota State Office.

The National Audubon Society is one of the nation's leading environmental organizations. We have 550,000 members, organized in 520 chapters in the U.S., Canada, and Central America. Our members are concerned about birds, wildlife, and their habitats. Audubon's involvement with the issue of snow goose overpopulation has included: (1) representation on the Arctic Goose Habitat Working Group; (2) participation in the Hudson Bay Lowland Excursion, coordinated by the Arctic

Goose Joint Venture Management Board; and (3) representation in the Stakeholder's Committee on Arctic Nesting Geese.

The National Audubon Society endorses the recommendations of the Arctic Goose Habitat Working Group, an international team mandated to scientifically document this urgent ecological problem. It is essential that we develop immediate steps that directly reduce the mid-continent population of Lesser Snow Geese. Long-term solutions which may involve changes in land-use practices in the southern and central United States also need to be developed.

The mid-continent population of Lesser Snow Geese (breeding west of Hudson Bay, and wintering on the southern Great Plains and western Gulf Coast) has grown by about 300 percent since the 1960s, and is now estimated at well over three million birds. The population is continuing to grow at an annual rate of 5 percent. This unprecedented number of mid-continent Lesser Snow Geese has had an extensive, destructive, and potentially irreversible effect on arctic and sub-arctic staging and breeding habitats.

The Snow Goose population nesting west of Hudson Bay, Canada, has reached incredible densities (sometimes with as many as 3,000 nests packed into one square kilometer of tundra). Plant species are being destroyed at unprecedented levels as a result of grubbing (by the root) and grazing by the burgeoning Snow Goose population in the Arctic. These plants are being replaced over vast areas by unpalatable, salt-tolerant species. To quote Robert F. Rockwell, Kenneth F. Abraham, and Robert L. Jeffries [Winter 1997 issue of the Living Bird Quarterly] "Scientists are concerned that the increasing numbers of geese may soon lead to an ecological catastrophe as these voracious feeders turn the delicate arctic habitat they inhabit into a barren wasteland."

Ironically, the problem of too many Snow Geese is one of our own making. The rapid increase in mid-continent Snow Goose populations is primarily a result of human modifications of habitat on the wintering grounds, along the migratory routes, and in the staging areas. Agricultural land-use and wildlife management practices have provided a nutritional "subsidy," and have led to high winter survival and recruitment rates. Efforts to protect and enhance populations of waterfowl have worked too well for Snow Geese. Each year, an expanded population of Snow Geese has arrived in their arctic habitat in a stronger condition, with increased breeding success.

These burgeoning numbers of mid-continent Lesser Snow Geese have caused widespread and potentially irreversible devastation to two-thirds of the habitat that otherwise would be mostly pristine tundra west of Hudson Bay in Canada. Long term studies show that populations of many bird species that depend on tundra habitat are declining precipitously as a result of the growing Snow Goose population. These include species from the Partners in Flight "WatchList" of birds at risk such as Hudsonian Godwit and Smith's Longspur, other rare species such as Yellow Rail, American Golden Plover, and Stilt Sandpiper.

If we do not act, nature will not "take its course" in the short time needed to halt devastation of the tundra. This is due to the increased ability of Snow Geese to sustain themselves on the wintering grounds in ever-greater numbers. It is also due to the species' demonstrated ability and willingness to extend their Arctic/Subarctic nesting and foraging ranges continually as existing breeding grounds deteriorate. Although negative effects of these factors have been observed in Snow Geese offspring (i.e., smaller size, poor feather development, and increased disease and mortality), adult survival continues to increase. A potential scenario is that before millions of these geese suffer a population crash, they will have spread across much of the Arctic, devastating huge areas of tundra, and taken several other valuable bird and animal species with them.

We are here today to publicly state the unanimous resolution of National Audubon's Board of Directors to protect wildlife habitat and ecosystems in the Arctic and Subarctic currently under threat from damage by burgeoning populations of Lesser Snow Goose. The Board voted in September 1997 to support the science-based recommendations of the Arctic Goose task force to reduce the mid-continent population of the Lesser Snow Goose through expanded hunting and other means. Audubon's concern in this situation is in line with the Society's mission to protect birds, wildlife, and their habitat, using the best tools available.

The Board resolution commits the National Audubon Society to work closely with Federal, state and Canadian agencies, and other non-governmental organizations to define the most effective mix of short-term and long-term solutions to the Snow Goose population problem. By acting now, we hope to reduce the loss of critical habitat and to protect the many bird species and other wildlife that depend on this habitat.

Mr. Chairman, once again I want to thank you for providing me with this opportunity to testify before the Subcommittee today. Ms. Thompson and I would be happy to answer any questions you might have.

STATEMENT OF MARK VAN PUTTEN, PRESIDENT, NATIONAL WILDLIFE FEDERATION

OFFICE OF THE PRESIDENT

The Hon. JIM SAXTON, Chairman,
Fisheries, Wildlife and Oceans Subcommittee,
Resources Committee,
U.S. House of Representatives,
Washington, DC.

Dear Mr. Chairman: I understand that the Fisheries, Wildlife and Oceans Subcommittee will be holding a hearing on April 23, 1998 to examine the overpopulation of mid-continent arctic snow geese and its subsequent impact to the arctic ecosystem. This is a wildlife management issue of concern to the National Wildlife Federation (NWF).

In March of this year at the NWF Annual Meeting the resolution "Protection of the Arctic Ecosystem" was approved by our 46 independent state and territorial affiliate organizations. I ask that this letter and the attached resolution be entered in the hearing record.

Thank you.

Sincerely,

MARK VAN PUTTEN,
President

Attachment: NWF 1998 Resolution "Protection of the Arctic Ecosystem"

PROTECTION OF THE ARCTIC ECOSYSTEM

WHEREAS, the National Wildlife Federation is the nation's largest conservation education organization and is dedicated to protecting our environment and conserving and restoring wildlife and their habitats; and

WHEREAS, the mid-continent population of lesser snow geese *(Chen caerulescens)* is a valuable waterfowl resource of international importance that has increased dramatically in the last ten years; and

WHEREAS, the fragile tundra habitat of these geese in large portions of the Arctic ecosystem along and west of Hudson Bay is undergoing widespread devastation caused by overgrazing due to overpopulation of these geese as a result of the abundance of food on winter ranges; and

WHEREAS, this largely pristine tundra habitats is important not only to sustainable populations of lesser snow geese, but to many other bird species as well as other plant and animal species; and+

WHEREAS, scientific research suggests that the alterations of plant community composition and structure and increased soil salinity due to the overgrazing by lesser snow geese of their nesting habitat may be irreversible; and

WHEREAS, current agricultural practices and hunting regulations on the wintering grounds, along migratory routes and in staging areas of Lesser Snow Geese are perpetuating lesser snow goose populations at levels higher than breeding habitat can endure without destruction of that breeding habitat; and

WHEREAS, the National Wildlife Federation has long supported and endorsed the sound scientific management of wildlife and the habitats upon which wildlife depend; and

WHEREAS, the National Wildlife Federation believes controlled hunting and native harvests to be the most appropriate scientifically based strategies for reducing the mid-continent population of Lesser Snow Geese;

NOW, THEREFORE, BE IT RESOLVED that the National Wildlife Federation in its Annual Meeting assembled March 19-22, 1998, in Alexandria, Virginia, reiterates its support for the sound scientific and sustainable management of wildlife and their habitats; and

BE IT FURTHER RESOLVED that the National Wildlife Federation encourages and advocates the immediate development and implementation of sound, scientifically based strategies to reduce the mid-continental population of lesser snow geese to levels at which their breeding habitat can be maintained; and

BE IT FURTHER RESOLVED that the National Wildlife Federation recommends that priority be given to harvest strategies including more liberal Federal regulatory guidelines specifically targeting lesser snow geese hunting methods and native harvests before other control measures are employed, if necessary; and

BE IT FURTHER RESOLVED that the National Wildlife Federation urges continued research and the restoration, where possible, of the fragile and critically important subarctic tundra habitat destroyed or degraded by snow goose overgrazing; and

BE IT FURTHER RESOLVED that the National Wildlife Federation encourages and advocates the development and implementation of long-term strategies relative to land-use practices, including agriculture, harvest methods and regulatory controls on the wintering grounds, along migratory routes, and in the staging areas of the mid-continental population of lesser snow geese to help maintain their population at a level which will conserve their Arctic ecosystem.

STATEMENT OF JOHN W. GRANDY, PH.D., ON BEHALF OF THE HUMANE SOCIETY OF THE UNITED STATES

Thank you, Mr. Chairman, for the opportunity to present to the Subcommittee the views of The Humane Society of the United States on House Concurrent Resolution 175—expressing the sense of Congress regarding the need for a comprehensive management strategy to save the tundra from continued excessive depredations by the mid-continent lesser snow goose. I am Dr. John W. Grandy, Senior Vice President for Wildlife and Habitat Protection. I hold a Ph.D. in wildlife ecology and management. My doctoral dissertation focused on waterfowl biology; I have been involved both professionally and personally in associated issues throughout my career.

The Humane Society of the United States, or The HSUS, is the nation's largest animal protection organization, with more than six million members and constituents. I appreciate the opportunity to testify on behalf of these individuals.

The mid-continent population of lesser snow geese breeds in the Canadian Arctic and winters in Texas, Louisiana and other Gulf Coast states. Since the 1940s, the availability of agricultural waste grain (e.g., soybeans and rice), has allowed more geese to survive the winter in good condition relative to earlier years in this century when wintering geese were sustained largely on salt marsh grasses bordering the Gulf of Mexico. As a result, the geese have been returning to their Arctic breeding grounds in good condition. Reproduction has been successful, leading to a population increase in scattered portions of the Arctic.

Some researchers are now expressing concern that there are more snow geese than their Arctic breeding grounds can support. Habitat destruction has been documented, principally in the La Perouse Bay region near Churchill, Manitoba and at Cape Henrietta Maria (the western point at which James Bay opens into the Hudson Bay).

Although damage has not been quantified or even seriously documented throughout the huge areas in the Arctic used by these geese, the Fish and Wildlife Service (hereinafter "FWS" or "Service") has announced that it plans to implement changes in hunting regulations aimed at the killing of half or more of the current population of mid-continent lesser snow geese. Specifically, the Service will permit, encourage and facilitate the indiscriminate slaughter of one and a half to three million snow geese over the next eight years, regardless of whether the geese are associated with so-called unacceptable habitat alterations.

This is being proposed allegedly to alleviate a purported "ecological crisis" on their breeding grounds as a result of snow geese eating vegetation and living their natural lives. Recommendations and suggestions under active consideration include: encouraging hunters to kill even more snow geese during the regular hunting season; permitting spring hunting (after March 10); increased daily kill (so-called bag) limits (so that up to 100 snow geese per day could be legally killed or, as an alternative, permitting unlimited killing); use of electronic calls; use of baiting to lure hungry geese into hunting areas; and, use of hazing to put excessive stress on migrating snow geese so as to stop them from feeding, thereby reducing their body condition and decreasing their nesting success. In addition, Canadian natives would be encouraged to collect as many eggs as possible, regardless of the status of the snow goose population from which eggs are taken. The Humane Society of the United States is strongly opposed to the entire plan, and the aforementioned recommendations and the indiscriminate, massive and brutal slaughter that would result.

The situation is this. There is evidence from La Perouse Bay (a relatively small area on the western edge of Hudson Bay), and parts of the Hudson Bay lowlands, and largely anecdotal evidence from a few other areas that habitat change is occurring as a result of use by snow geese. The area in which this is occurring is approximately 100,000 acres, and two or three snow goose colonies are implicated. By contrast, the Arctic ecosystem is vast, consisting of millions of square miles, and snow goose nesting colonies are scattered widely throughout the Arctic, from Russia's Wrangle Island in the west, north to and along the shores of the Arctic Ocean in Canada, to and beyond Baffin Island in eastern Canada, and south to Hudson and James Bay in Canada. In short, the Arctic habitat for snow geese and other animals occurs across literally millions of square miles.

These populations are by no means homogeneous. For example, in contrast with the population in La Perouse Bay, the population in West Hudson Bay has decreased from 400,000 to less than 200,000 geese in recent years, and others are relatively stable (western Arctic), declining or endangered (Wrangle Island), or apparently large but unstudied (Baffin Island and associated areas). Most populations of snow geese have not been studied to any significant degree, and no systematic surveys have been conducted to determine whether they are having any measurable effect on their habitat. Yet, if the pending FWS proposal is adopted, snow geese and other "white" geese (e.g., Ross' goose), will be subject to slaughter in the spring, regardless of their species, or the condition of their breeding habitats or the breeding colony. In the opinion of The HSUS, this constitutes indiscriminate, needless slaughter by any definition.

No governmental or private biologist involved in formulating the current proposal has presented evidence that would in any way justify this type of mass destruction or annihilation of these magnificent animals. There is some evidence of significant habitat alteration in La Perouse Bay and along the Hudson Bay lowlands, but this must be put into the context of the Arctic. The Arctic is vast, consisting of one or multiple ecosystems. Catastrophic change is and has been the operative factor influencing life in Arctic ecosystems throughout history. The Arctic has been subject to at least three periods of significant glaciation, and now, if current predictions hold, much of the lowland Arctic is subject to imminent flooding due to global warming and sea level rise. Against this backdrop, how can the Congress and the FWS conclude that habitat change caused by snow geese is so severe as to be irreparable or to necessitate the brutal destruction of millions of snow geese?

The well-known and sporadic eruptions of snowy owls, lemmings, and Arctic hare testify to the dramatic population changes of Arctic animals that occur with some frequency. The current snow goose population dynamics are nothing more than a continuation of this pattern. And, while snow geese may cause some localized habitat alterations and alteration of distribution patterns of specific species, these effects could not possibly require or justify the kind of destructive draconian solution that slaughtering one and a half to three million snow geese would entail.

Specific Problems with the Pending Management Actions

Use of Lethal Control

An important principle of the control of damage that wildlife sometimes causes is that control is most, and often only effective, if it is targeted precisely at the area where damage is occurring. Applied to this situation, this means that if lethal control is justified at all, it must be centered where the damage is occurring to be effective. A principal way to do this would be to round up and slaughter geese on the particular habitats where damage is occurring during the summer flightless period when weather is good, if it can be shown that habitat damage is severe enough to warrant such action. As distasteful as this would be to The HSUS, it at least has the chance to be effective in reducing the localized habitat damage that is documented in specific areas.

It is telling that this alternative has not been seriously considered by the FWS or the agencies and organizations supporting it. Moreover, governmental and non-governmental biologists supporting the FWS proposal never seriously addressed the futility of trying to reduce habitat destruction in specific areas in Canada by randomly killing snow geese thousands of miles away. They are opting instead for the indiscriminate, wanton and inhumane destruction that would result from having hunters kill millions of snow geese in Arkansas, Texas, Nebraska and the Dakotas. Frankly, given the demonstrable futility of attempting to protect specific habitats by randomly killing geese thousands of miles away, this proposal seems designed more to convince hunters and the public that random slaughter of wildlife is acceptable.

Generalized Egging

The FWS will likely endorse generalized egging (taking eggs from nests), when only a few colonies in Canada may need to be reduced. While collection of freshly laid eggs (or even nest disruption or destruction) is more acceptable to The HSUS as a means of population control than killing of adults, it is equally unacceptable where it cannot be justified.

The point here, of course, is that snow geese are not an animal for which generalized population destruction or disruption can be or has been justified, and thus these activities can only be permitted on the basis of serious evidence demonstrating need in particular colonies.

The Proposed Eight-year Population Reduction Raises Serious Doubts over the Rationale for the Entire Proposed Program

The FWS and its supporters have stated repeatedly that the impact of snow geese on Arctic ecosystems rises to the level of a crisis, thereby requiring an immediate and aggressive response. The proposed response, however, entails an eight-year effort to reduce the current snow goose population by half. If damage at unacceptable levels is in fact severe and increasing at an alarming rate, then that damage should be addressed now, at the sites where it is occurring. A willingness to wait eight years to alleviate the "crisis" belies the assertion that one in fact exists, or that damage is so severe as to necessitate indiscriminate slaughter.

Concern for Young Snow Geese

The FWS, and others, suggest that the proposed slaughter is necessary in part to prevent the suffering of snow goose goslings, which may suffer as a result of food shortage. This is preposterous. It is absurd for the Service to suggest that it wishes to stop natural population regulation in the form of some goslings dying from a natural food shortage and then suggest that the solution is to subject millions of adult geese to unnecessary and indiscriminate suffering.

Message the Proposal Sends to the Public

Apart from all the issues addressed above, The HSUS is gravely concerned about the message the proposed "solution" sends to the public, our children and future generations. That massive slaughter of adult snow geese is the first and only proposed remedy is appalling. These are magnificent birds, which may live more than eight years, remain in family groups, and teach their offspring. They are not inanimate objects; they are living, breathing sentient animals that deserve our respect. As a society and world, we must find better ways to solve wildlife problems than by killing animals, much less than by encouraging indiscriminate and brutal slaughter of millions of animals.

The Congress and the Service are on the cusp of sending a very clear message to an increasingly involved public that the way to deal with wildlife problems, including those whose ultimate cause is human activity, is by destroying wildlife. Increasingly, an ever-more caring public is calling for wildlife management that includes a sense of stewardship, humility, respect and compassion, and makes significant and reasonable efforts to solve wildlife problems in the least destructive ways possible. The FWS proposal simply does not meet that standard. The Humane Society of the United States rejects it, and strongly urges the Subcommittee to reject House Concurrent Resolution 175 as well.

Thank you.

Wildlife Management Institute
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Phone (202) 371-1808 • FAX (202) 408-5059

Testimony By
Dr. Rollin D. Sparrowe, President
Wildlife Management Institute
Before The
Subcommittee on Fisheries Conservation, Wildlife & Oceans
U. S. House of Representatives
Washington, D. C. 20515
April 23, 1998

Mr. Chairman:

The Institute is a nonprofit organization dedicated to fostering effective management of habitats and wildlife in North America. We are pleased to respond to the invitation to testify concerning the extent of damage that snow geese may be causing to the Arctic tundra, and to convey results of an international stakeholders committee that has examined the issue.

As background, I am a wildlife biologist by training. My background includes a long personal involvement in waterfowl management, in research and as Chief of Migratory Bird Management for the U. S. Fish and Wildlife Service. I have been on the Arctic breeding grounds of snow geese on the Hudson Bay, and have a working knowledge of conditions there.

Mr. Chairman, the Arctic Goose Stakeholder's Committee was not an official committee representing any agency or organization, but came together at my invitation for three meetings in October and December 1997, and January 1998. Participation was voluntary, and expenses were paid by the participants. Not all who were invited chose to participate directly, but drafts of stakeholder's committee deliberations were widely distributed, as was the final report. I believe participants included a wide array of viewpoints on the issues, and that the committee action stimulated discussion with many organizations.

Basic information provided participants included the publication Arctic Ecosystems in Peril: Report of the Arctic Goose Working Group. Further, participants listened to presentations by key scientists and managers from Canada and the United States, and conducted extensive face-to-face discussions with these experts.

The Stakeholder's Committee held repeated discussions with biologists from the U. S. Fish and Wildlife Service, state biologists and managers from three of the Flyway Councils, The Canadian Wildlife Service, Animal Damage Control, American Museum of Natural History, Ducks Unlimited, and other organizations. A law enforcement representative attended and participated in all meetings. Briefings and discussions were free to cover any topic of interest.

Details of the approach taken by the stakeholder's Committee, and its recommendations are contained in the March 11, 1998 Report of The Stakeholder's Committee on Arctic Nesting Geese. Please accept this report for the official record as part of my testimony.

Mr. Chairman, the following points illustrate the findings of the Stakeholders:

- Growing numbers of mid-continent lesser snow geese are adversely affecting many of their Arctic and sub-Arctic habitats.
- Degradation of the Hudson and James Bay lowlands saltmarsh ecosystem is well documented, and affects not only geese but other species.
- Prompt management action is called for in the United States and Canada, both to reduce goose numbers and change management strategies which favor geese.
- A long-term plan must be developed to return geese to sustainable levels for their Arctic habitats.
- Lethal and non-lethal actions should be pursued to reduce the population, with monitoring, enforcement, and an adaptive process to guide these actions.
- The long-term objective should be ecosystem restoration and sustainability to benefit all plants and animals in the affected ecosystems.

Mr. Chairman, the stakeholder's did not treat this as a hunting issue. This is an issue of a wildlife population grown beyond the capacity of its habitat. Snow geese are specifically recognized in the Report as valuable components of natural ecosystems. Any killing necessary for management should be done as humanely as possible and geese should be used for food where possible.

Hunting was recognized as one of the most cost-effective tools available to managers if employed in concert with other actions. While some specific actions, including hunting, were recommended for consideration by the United States and Canada, all of those actions would occur through legal public processes. Stakeholders reserved their prerogatives to respond individually to any action proposed by management agencies.

There were disagreements among some stakeholders during the process. Those are reflected in the report. One stakeholder now differs with the science underlying the issue, and has chosen to attack the process, role of technical participants, and recommendations. They are clearly out of step with the many other groups that evaluated the same information.

A key question seems to be why not allow "nature to take it's course"? On balance, The Stakeholder's Committee agreed this is not a "natural" situation. It has risen over time because geese were provided many kinds of protection, agriculture provided immense quantities of high quality food in winter, and the overall environment for geese was widely improved. The stakeholders generally felt that allowing lesser snow geese to continue to expand unchecked and literally eat their breeding habitat, and then presumably die off in large numbers, would be irresponsible.

Many experts believe long-term habitat damage would likely be so severe, that so-called natural recovery would not occur. While hunting programs are not guaranteed to solve the whole problem, they have been the key to reducing or building other goose flocks in North America. They address adult survival directly, which is the biological key to this problem. Based on experience with north American goose management, additional hunting programs logically fit as a part of an adaptive approach to population reduction.

Habitat management plans are being developed for migration and wintering habitats. Paired with targeted hunting programs, supported by monitoring and analysis, a true adaptive process can be developed. Mr. Chairman, a stakeholder's committee will likely reconvene in the future to examine progress. Continued involvement by an array of interest groups can help steer this difficult management process. Thank you.

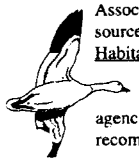
March 11, 1998

Report of The Stakeholder's Committee on Arctic Nesting Geese

Introduction

A group of Canadian and United States stakeholders met three times (October and December 1997, January 1998) to consider solutions to the reported problem of overpopulation of mid-continent lesser snow geese. A list of participants in these meetings is attached. The group met for a day and a half each time, twice at Laurel, Maryland and once at Minneapolis, Minnesota.

The meetings were convened by Rollin D. Sparrowe, President of The Wildlife Management Institute. Meeting facilitation was by David J. Case, President of D.J.Case and Associates. Technical assistance was provided as noted on the list of participants. A primary source was the technical report Arctic Ecosystems in Peril, Report of The Arctic Goose Habitat Working Group.



Detailed briefings and discussions were conducted with scientists and managers from agencies and private organizations from the Arctic Goose Joint Venture. The findings and recommendations presented here were based on those briefings and decisions.

The findings and recommendations represent the sense of the stakeholder group, not an expression of a position for the organization each person works for. The group searched for consensus on these and other issues, but took no votes. Each organization will respond on their own to any subsequent rule-making or agency decision. The findings and recommendations presented here apply to mid-continent lesser snow geese and are subject to existing state, federal and provincial decision making processes, including public involvement.

In general, the stakeholders agreed to the statements of Purpose, Findings, and Guiding Principles as presented here. Differences arose over some specific Recommendations, particularly those concerning the use of hunting as apart of the overall solution. These are documented under Concerns of Participants. All participants agreed that the issues were more than lesser snow geese and hunting, and embrace the future of functioning ecosystems along the Hudson and James Bay lowlands with all the diverse species of flora and fauna found there. Further, all agreed that while an initial focus is on reducing the mid-continent population of lesser snow geese, managers need to develop long-term management strategies to maintain the population once it has fallen to within manageable levels. Strategies need to include issues on breeding, migration, and wintering habitats.

March 11, 1998

Purpose of Stakeholder's Committee

To recommend appropriate and effective management actions to restore and sustain Arctic ecosystems, including the management of mid-continent lesser snow geese and other species.

Findings

1. There is a serious ecological problem of mid-continent lesser snow geese adversely affecting many of their Arctic and sub-Arctic habitats.

2. The degradation of the Hudson and James Bay lowlands saltmarsh ecosystem is well documented, and already has had a negative impact on local populations of snow geese and some other species, thereby decreasing biodiversity.

3. The problem as documented demands prompt management action specifically to halt further habitat destruction.

4. The overabundance of mid-continent lesser snow geese is not a natural phenomenon. It is a human-induced problem caused by things such as changes in agricultural practices and development of refuge areas on both public and private lands.

5. The mid-continent lesser snow goose population is above sustainable levels for the Arctic and sub-Arctic habitats upon which it depends, and which requires a long-term plan to reverse the ecosystem degradation.

Guiding Principles

1. Lethal and non-lethal actions should be pursued simultaneously.

2. Adaptive management strategies involving enhanced evaluation and monitoring of the ecosystem and populations of snow geese and other species, as recommended in Arctic Ecosystems in Peril, must be a component of a lesser snow goose population reduction program.

3. Necessary resources must be provided by the agencies to carry out implementation, enforcement, evaluation, and monitoring of snow goose reduction programs and long-term population management.

March 11, 1998

4. Snow geese must be treated with respect as a valuable component of the natural ecosystem. Geese that are killed for management reasons must be killed as humanely as possible and utilized as food wherever feasible.

5. Recommendations regarding harvest regulations apply to a light goose only season when all other waterfowl seasons are closed. Those are marked below with an asterisk.

6. Ecosystem restoration and sustainability should be the long-term objective, with an intent to benefit all species of plants and animals.

Recommendations

The Arctic Geese Stakeholder's Committee agreed to recommend the following:

1. *United States and Canadian governments should permit a Conservation Harvest of light geese between March 11 and August 31, where and when appropriate.

2. Subsistence harvest, including egging, should be encouraged in Canada where appropriate.

3. The survival and productivity of lesser snow geese should be reduced through the appropriate management of public lands, including State, Federal, and Provincial refuges, and, where appropriate, private land.

4. *The U. S. Fish and Wildlife Service and Canadian Wildlife Service should consider allowing the use of electronic callers.

5. *The U. S. Fish and Wildlife Service and Canadian Wildlife Service should consider increasing bag and possession limits.

6. Federal, State, and Provincial agencies are encouraged to develop mechanisms to facilitate snow goose hunting.

7. State and Provincial agencies should consider innovative methods such as reciprocal licensing to encourage non-resident hunters.

8. Agencies should develop and implement comprehensive education and outreach programs for the public and address both positive and negative impacts that habitat management actions have on migratory bird populations, specifically regarding agricultural practices and private lands management.

9. Agencies should review the efficacy of hazing as a management tool on a site specific basis.

10. Agencies should review the efficacy of nest destruction on a site specific basis.

Concerns of Participants

All of the participating organizations reserve their prerogative to respond individually to any management action proposed or taken by agencies. It is assumed that all customary public rule-making processes involving public input will be employed as needed.

The Humane Society of the United States (HSUS) participated in all of the discussions with the understanding that it did not endorse public hunting as any part of the solution to managing Arctic Geese or the Arctic ecosystem. Further, HSUS believes that published data, including the report Arctic Ecosystems in Peril, do not demonstrate pervasive damage to arctic habitats, and do not justify reduction of midcontinent lesser snow goose populations. HSUS advocates use of non-lethal methods of population control such as hazing to address problems caused at specific colony sites. If the habitat damage problems are not solved in this manner, site-specific population reduction targeted first at eggs, and only as a last resort at live birds, may be justified. HSUS disagrees vehemently with the direction and thrust of this report.

The other stakeholders recognize that habitat and ecosystem damage is being done by not only the geese at specific colonies, but by all migrant lesser snow geese as they gather in staging movements all along the Hudson and James Bay lowlands. Further, the other stakeholders believe that the damage is pervasive enough to justify prompt, significant reduction in midcontinent lesser snow goose numbers to forestall further habitat damage which could become irreversible. That damage is affecting many species of wildlife that are an integral part of the Arctic ecosystem, raising the stakes well beyond the geese themselves. Generally, other stakeholders are supportive of the use of hunting as part of the solution within existing laws and decision processes. On discussion of potential non-lethal management, other than changing habitat management and working with private landowners, no non-lethal tools seem likely to be widely useful.

Future of the Stakeholder's Committee

The Stakeholder's Committee agreed to cooperate among themselves on communication with professional wildlife managers, the hunting public, and the public in general. There was recognition that stakeholders need to monitor future developments in implementation of management actions to solve the problem of ecosystem degeneration connected to lesser snow geese. A committee of stakeholders may need to be convened again as management programs proceed.

March 11, 1998

STAKEHOLDER'S COMMITTEE ON ARCTIC NESTING GEESE

Sandy Baumgartner	Canadian Wildlife Federation
John Bianchi	National Audubon Society
Richard Bishop	Mississippi Flyway Council
Larry Carpenter	Inuvialuit Game Council
Herbert Felix	Inuvialuit Game Council
Susan Hagood	Humane Society of the United States
John Grandy	Humane Society of the United States
Doug Inkley	National Wildlife Federation
Josh Sandt	Atlantic Flyway Council
Rollin Sparrowe	Wildlife Management Institute
Genevieve Thompson	National Audubon Society
George Vandel	Central Flyway Council

ADDITIONAL ORGANIZATIONS CONTACTED

American Bird Conservancy
American Farm Bureau
Canadian Federation of Agriculture
Canadian Nature Federation
Pacific Flyway
Nunavut Wildlife Management Board
Manitoba Department of Natural Resources
World Wildlife Fund Canada
Department of Resources, Wildlife and Economic Development, Northwest Territories
Canadian Federation of Agriculture
U.S. Department of Agriculture

TECHNICAL ADVISORS

Bob Adamcik	U.S. Fish and Wildlife Service (Refuges)
Allison Arnold	U.S. Fish and Wildlife Service (MBMO)
Bruce Batt	Ducks Unlimited, Incorporated
Dale Caswell	Canadian Wildlife Service
Dave Duncan	Canadian Wildlife Service
Mike Johnson	North Dakota Game and Fish Department
Al Mannville	U.S. Fish and Wildlife Service
Pete Poulos	USDA/APHIS (Wildlife Services)
Robert Rockwell	American Museum of Natural History
Paul Schmidt	U. S. Fish and Wildlife Service (MBMO)
Chester Hamilton	U.S. Fish and Wildlife Service (LE)
Hugh Vickery	U.S. Fish and Wildlife Service (Public Affairs)
Stephen Wendt	Canadian Wildlife Service

International Association of Fish and Wildlife Agencies
(Organized July 20, 1902)

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Len Ugarenko
NAWMP Coordinator

Jack H. Berryman
Counselor Emeritus

March 30, 1998

The Honorable Slade Gorton, Chair
Interior Appropriations Committee
United States Senate
Washington D.C. 20510

Dear Senator Gorton:

This letter requests your support of a joint resolution from the Flyway Councils to significantly increase funding in the Federal Budget for goose management programs. This resolution was passed by all four Flyway Councils and it relates to important efforts necessary for the management of geese in North America. Geese rank high in importance to waterfowl hunters and birdwatchers. Closures and restrictions of goose hunting seasons and the associated loss of hunting opportunity have caused substantial losses in economic return and recreational opportunity in the Central, Atlantic, Mississippi and Pacific flyways in the last several years. Conversely, continued growth of snow geese and some Canada goose populations, continue to impact tundra and agricultural ecosystems and create increasing conflicts with human interests. The need for better biological data through monitoring programs, habitat management, and other forms of population management is increasing. Even though state agencies and private partners have increased commitments to joint management ventures, federal budgetary resources are becoming increasingly scarce.

I would like to call your attention to three specific examples where support is urgently needed. The first of these issues involves the rapidly increasing population of lesser snow geese that migrate and winter primarily in the Central and Mississippi flyways. These geese have become so abundant that their grazing now threatens many important arctic and subarctic nesting areas for migratory birds in North America. Additional funding is needed to effectively manage and monitor the response of this goose population in a timely fashion and in a manner that will be supported by the American public.

In the Pacific Flyway, a second issue that requires additional support is the complex Canada goose management situation in Oregon and Washington that was identified in the Congressional Budget this year. There is a need to support goose populations of sufficient size for Alaska native subsistence harvest as well as recreational harvest in other states. Two goose populations are below population objectives while five others are at or near objectives set in cooperatively-written management plans. The combined goose populations are causing substantial damage to agricultural interests in these two states. The need to reduce or re-distribute some populations while limiting the harvest of others is extremely challenging. Additional funding will be used to reduce agricultural damage in Washington and Oregon by more intensive management of publicly-owned habitats, increase control activities by Wildlife Services within the U.S. Department of Agriculture, and more effectively monitor the results of management actions enacted for this mix of Canada geese.

Additional funds are also needed to restore Canada geese which nest in Northern Quebec and winter in the Atlantic Flyway. The Canada goose hunting season has been closed to protect these geese. However, similar to the situation in Oregon and Washington, stocks of resident geese are numerous. Additional funding will be used to improve management programs directed at restoring the northern Quebec population while addressing agricultural and other damage concerns associated with increasing local nesting populations of Canada geese in Atlantic Flyway states.

There is widespread support among the public, conservation organizations, state agencies, and the International Association of Fish and Wildlife Agencies for taking steps to resolve these goose management problems before more habitat damage, both in remote Arctic habitats and developed agricultural lands occurs. The Joint Flyway Council recommendation supports a budget increase of approximately $10 million to adequately address goose population monitoring, management and research needs. We anticipate that the Fish and Wildlife Service will work through both the Arctic Goose Joint Venture and Flyway Councils to address these important issues. I have included a list of the chairman of the four flyway councils should you have any questions regarding the specific actions that would be initiated with additional federal funding.

Sincerely,

R. Max Peterson, Executive Vice President
International Association of Fish and Wildlife Agencies

cc:

The Honorable Ralph Regula, Chair
Interior Appropriations Committee
United States House of Representatives
Washington D.C. 20515

The Honorable John S. Tanner
United States House of Representatives
Washington D.C. 20515

The Honorable Jim Saxton
United States House of Representatives
Washington D.C. 20515

Mr. Robert McDowell, Chair
Atlantic Flyway Council

Mr. Jeff Ver Steeg, Chair
Mississippi Flyway Council

Mr. Keith Trego, Chair
Central Flyway Council

Mr. James Greer, Chair
Pacific Flyway Council

Ms. Jamie Clark, Director
U.S. Fish and Wildlife Service

Mr. Roger Holmes
International Association of Fish and
Wildlife Agencies

Canadian Embassy Ambassade du Canada

501 Pennsylvania Avenue, N.W.
Washington, D.C. 20001

April 22, 1998

The Honourable Jim Saxton
Chairman
Subcommittee on Fisheries Conservation,
Wildlife and Oceans
Committee on Resources
U.S. House of Representatives
805 O'Neil House Office Building
Washington, D.C. 20515

Dear Chairman Saxton,

Thank you for your invitation to testify before the Subcommittee on Fisheries Conservation, Wildlife and Oceans at a hearing on the snow goose problem, April 23. As you surmised, Canadian Government policy does preclude officials from testifying before foreign government bodies. However, in view of the importance of continuing cooperative management of North America's migratory birds, I am pleased to accept your invitation to provide written material for your official hearing record, which has been prepared by the Canadian Wildlife Service (attached).

Please do not hesitate to contact me if I can provide any further information on this or any other issue of common concern.

Yours sincerely,

Raymond Chrétien
Ambassador

THE ARCTIC GOOSE

A Paper Prepared for the Subcommittee on Fisheries,
Wildlife, and Oceans
U.S. House of Representatives

by

The Canadian Wildlife Service
Environment Canada

Introduction

The Canadian Wildlife Service has been working closely on the problem of overabundant arctic goose populations with the United States Fish and Wildlife Service, Flyway Councils, and other groups. Working with these partners in the International Arctic Goose Joint Venture of the North American Waterfowl Management Plan we supported the North American Arctic Goose Conference in Albuquerque in 1995. There the scientific community spoke with one voice on the seriousness of the problem. We then co-hosted an international workshop at the headquarters of Ducks Unlimited Canada, where a scientific team was assembled to produce the report "Arctic Ecosystems in Peril - Report of the Arctic Goose Habitat Working Group". We concur with the scientific findings of that report, in Parts I, II, and III, except to point out that reconsideration of some of the parameters of the models of the mid-continent lesser snow goose has shown that even larger harvests will be needed to bring the population under control. We participated in the stakeholders' committee that was assembled by the Wildlife Management Institute for the International Association of Fish and Wildlife Agencies, and feel that the findings of that committee were appropriate. Most recently, we took part in further analysis and population modelling which showed that the greater snow goose, which nests on northern Baffin Island and smaller nearby islands and winters in the Atlantic Flyway, will be similarly threatening its habitats within a few years.

Background

The large numbers of mid-continent snow geese and greater snow geese constitute a serious ecological problem that has damaged fragile arctic habitats, and will do so increasingly until the birds' populations are reduced.

It is important to remember that not all species of geese, and not all populations of snow geese are overabundant. In particular, the Wrangel Island snow geese which breed in Russia and winter along the Pacific Coast still need protective measures. So do the Canada geese that breed in subarctic areas in the northeastern part of the continent. It will be important to ensure that efforts to increase the harvest of snow geese do not jeopardize such stocks. We must also avoid harming populations of ducks such as the northern pintail whose status remains a concern.

Canada and the United States share the Migratory Birds Convention. With amendments that were negotiated in 1995, and have been approved by the U.S. Senate, the Convention will provide the tools we will need to address overabundant goose populations. In the amended Convention our countries agree to manage birds internationally, on a population basis, and to provide for and protect habitat necessary for the conservation of migratory birds. Article II provides that "subject to laws, decrees, or regulations to be specified by the proper authorities, the taking of migratory birds may be allowed at any time of the year for scientific, educational, propagative, or other specific purposes consistent with the conservation principles of this Convention". Clearly, this does not refer to recreational hunting, but to the taking of birds to benefit conservation.

Ratification of these changes to our Convention is necessary for some of the options now being considered to increase the annual harvest of snow geese. Further amendments to the Convention to deal with this issue are not necessary. The amendments to the Convention that were negotiated in 1995 are not yet in effect. The amendment protocol specifies that the changes will enter into force when the United States and Canada exchange instruments of ratification, and this has not yet happened. Canada continues to assign high priority to the completion of this task and is ready to ratify the amendments at the earliest opportunity.

In the Federal Regulatory Plan, published in the Canada Gazette, the Government of Canada has indicated that it will be considering changes to the Migratory Birds Regulations to allow special rules to increase the take of birds, and so help deal with the problem of overabundant migratory game bird species. This issue has also been raised in the migratory game bird status reports and regulation consultation documents issued by the Canadian Wildlife Service. Public meetings with stakeholder groups have been held in the Canadian Prairies, the provinces where most actions to reduce the overabundant lesser snow geese will take place. At this early stage in the regulation consultation process, and without a clear knowledge of when the exchange of instruments to ratify the amended Convention will take place, it is not sure when special regulations might take effect. However, we are optimistic that some changes may be ready for early 1999.

✱ We are not considering all the options recommended in the report "Arctic Ecosystems in Peril - Report of the Arctic Goose Habitat Working Group". For example, we are not planning commercialization of the snow goose harvest. [Among options under consideration would be to allow a "conservation take" in a snow-goose only season, outside the hunting season limits in the Convention. We are also considering the use of electronic calls for hunting snow geese, special allowances for the use of bait, steps to increase the take of snow geese by aboriginal people, modifications to bag limits and season dates during the regular hunting season, and other options.

The list of ideas being discussed is large, but local concerns and the sensitivities of Canadians about topics such as the ethics of hunting will play major roles in determining which special regulations might come into play at any time and place. The governments of Canada's provinces and territories will determine the steps taken within their jurisdictions to a large extent.

In the amended Migratory Birds Convention, Canada and the United States agree to meet regularly to address issues of importance to the conservation of migratory birds, including the status of migratory bird populations and the status of important migratory bird habitats. They agree to work cooperatively to resolve identified problems in a manner consistent with the principles underlying the Convention and, if the need arises, to conclude special arrangements to conserve and protect species of concern.

It was in part to meet this requirement for consultation that the Trilateral Committee for Wildlife and Ecosystem Conservation and Management discussed snow goose populations during their meeting in March this year. The Trilateral Committee includes the senior management of the federal wildlife agencies of Canada, the United States and Mexico. At that meeting the committee concluded that the mid-continent lesser snow goose and the greater snow goose were overabundant populations. They agreed that it would be appropriate for each country to take special measures to increase the harvest of those groups of birds, including the possibility of a managed take of snow geese outside the regular hunting season in Canada and the United States. They also agreed to identify the circumstances for ending special measures.

Their statement made it clear that actions, if any, would be determined through the proper regulatory processes and subject to the legislative jurisdiction of the authorities in each country. This agreement among the Canadian, U.S. and Mexican federal bodies tasked with providing scientific support for regulations on migratory birds is of great significance to the Canadian Wildlife Service.

Issues and Options

Can the ecological problem be solved in the northern breeding grounds of the geese?

> To date, no feasible method for reducing populations' numbers in northern areas has been proposed. Some of the more extreme ideas, such as the use of chemicals delivered onto breeding colonies by aircraft, are clearly unacceptable from considerations of humaneness, damage to non-target species, and effectiveness. The areas where the geese nest are huge and very remote from centres that can provide fuel and logistic support. Methods that would involve personnel on the ground are both risky and expensive. Weather conditions are often life-threatening. Polar bears are relatively common in these places, and human-bear proximity is dangerous for both

species. The geese are widely dispersed and difficult to find or capture. Modelling has shown that population control based on the taking of eggs and young geese is relatively ineffective, so breeding ground programs would probably have to target adult geese. We have developed techniques for the efficient capture of adult geese that would be applicable for a cost of about $50 per bird in the more accessible colonies, but that allows nothing for the much larger costs of processing and transportation if the meat were to be used rather than wasted.

Could a breeding ground solution work if it only dealt with the most affected areas?

The areas where damage has been documented most completely to date lie along the western coasts of James and Hudson Bays. However, the damage caused to these habitats is caused not only by geese that breed there, but also by geese migrating to the large northern colonies such as those on Baffin and Southampton Islands. A program to reduce the number of geese in only the most affected colonies, even if it were feasible, would fail because it would not deal with the millions of other birds that use the habitats during migration. Such an approach also fails to take preventative action before the other colonies also face irreversible habitat damage themselves.

What would be the consequences of just letting Nature take its course?

Today, human changes to the landscape have created conditions in which snow goose populations can expand. Nature's response is for the geese to increase exponentially. If we can adjust our effect on snow geese so that their births and deaths come into a better balance, Nature should respond by providing snow goose numbers that we can be comfortable with. If we fail to take action, Nature will certainly act, with a set of responses that include essentially permanent loss of some of the Arctic's most productive coastal habitats, localized population crashes in the snow geese, high snow goose gosling mortality, loss of snow goose diversity through mixing of goose populations and species in non-traditional areas, increases in diseases of waterfowl generally (not just snow geese), increased human-goose conflicts in agriculture, reduction and losses of many other arctic-nesting wildlife species and, probably, much lower long-term populations of arctic-nesting geese.

Summary

Canada, the United States, and Mexico have all adjusted the regular hunting seasons to begin dealing with this issue. Already the take of snow geese by hunters has shown encouraging increases. More will be needed. Throughout there will be an ongoing need for monitoring and evaluation. We need to track the population sizes of the geese and evaluate the effectiveness of our control strategies. We need to measure the harvest, both during the regular hunting season and during special seasons. Within the Canadian Wildlife Service we plan to step-up our efforts to bring scientific information to bear on the problem. This includes periodic photographic inventories of the goose colonies, new survey and tagging projects, and studies on other species that share the goose habitat. However, our resources for this work are limited. We must depend heavily on cooperative work with the United States Fish and Wildlife Service and the Flyway Councils to gather and analyze the scientific information we will all need. Clearly, more resources will be needed than are now available.

For further information, please contact:

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